

AMERICAN STEEL & WIRE COMPANY WIRE ROPE





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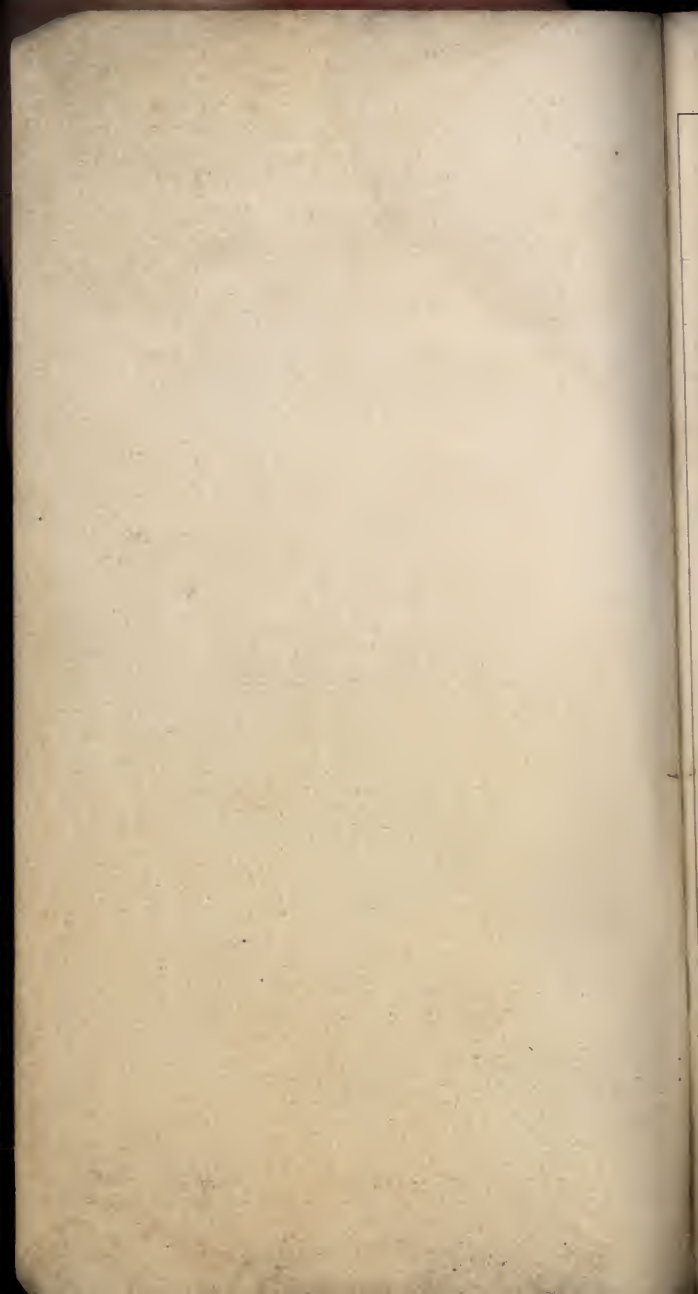


CATALOGUE OF
TABLES — PRICE LISTS
"HOW TO SPLICE WIRE ROPE"
"THE PROPER WAY TO TAKE
WIRE ROPE FROM REELS
AND COILS"

(See Index Page 111-112)

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American Steel & Wire Company

SUBSIDIARY UNITED STATES STEEL CORPORATION

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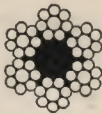
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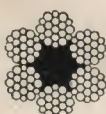
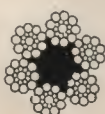
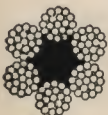
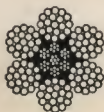
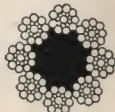
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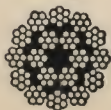
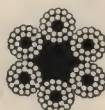
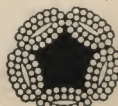
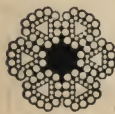
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American Wire Rope

The use of Wire Rope for mechanical purposes has increased very largely in recent years, so that it has almost completely superseded the older methods employing manila rope, and steel or iron chain.

Strength, flexibility, elasticity, rigidity and in fact, any desirable property may be obtained by an intelligent selection among the many grades and constructions shown herein.

Wire Rope is ordinarily furnished in five grades, or strengths, i.e., Iron, Cast Steel, Extron Cast Steel, Plow Steel and Monitor Silver Strand Steel, each being stronger than the other in the order named.

The property of flexibility depends, for the most part, upon the construction of the rope rather than upon the grade of metal entering it. In a given size of rope the more wires the more flexible.

If in doubt as to the rope best suited to your needs, confer with one of our sales offices. Your requirements will be carefully considered and the necessary information supplied.

The ropes illustrated herein are the ones most frequently used. Special grades and constructions can be furnished on application.

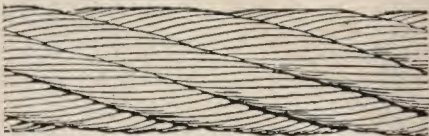
General Information

Lay of Wire Rope

Wire Rope is usually laid up as follows:

Regular Lay, Right Lay Rope

Wires in the strands laid to the left, strands laid to the right.



Regular Lay, Left Lay Rope

Wires in the strands laid to the right, strands laid to the left.

Lang Lay

Wires in the strands and the strands themselves all laid the same way, either right or left.

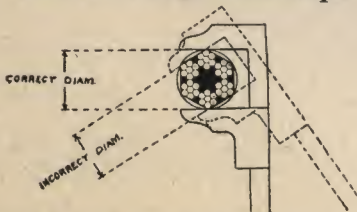


The list prices shown hereinafter are for either Right Lay, Left Lay or Lang Lay; also for Seale Patent.

Regular Right Lay furnished unless otherwise specified.

All list prices subject to discounts which will be furnished upon application.

How to Gauge Wire Rope



The diameter of a wire rope is the diameter of the circle which will enclose all the strands. Care should be taken in gauging a wire rope to take the greatest and not the smallest diametrical dimension, as shown above.

General Information (Continued)

Grades of American Wire Rope

The materials used in the wire rope described in the succeeding pages are grouped into five main divisions:

Iron

Plow Steel

Cast Steel

Monitor Silver Strand Steel

Extron Cast Steel

Iron

A low tensile strength material, very soft and ductile, but the heaviest in proportion to its strength and consequently of only limited usefulness. It is used to a limited extent for elevators. The physical characteristics of iron are softness, ductility and low tensile strength. Approximately 85,000 lbs. per square inch in the drawn wire entering into the rope.

Cast Steel

A medium tensile strength material, tough and pliable, of general utility. It is harder than iron and better resists external wear. When drawn into wire it has a minimum tensile strength of 170,000 lbs. per square inch, the maximum depending upon the size of the finished wire and other properties required.

Extron Cast Steel

Known also as Extra Strong Cast Steel. This is a grade midway between Cast Steel and Plow Steel in tensile strength and is tough and pliable. The strength is about two and a half times the strength of iron. A somewhat different chemical composition, the minimum strength being 190,000 lbs. per square inch of sectional area.

Plow

This is next to the strongest material used in wire rope. It is tough, but somewhat stiffer than either Cast or Extron Cast Steel, and possesses very nearly three times the strength of Iron. The minimum tensile strength in the wire is 210,000 lbs. per square inch of sectional area.

Monitor Silver Strand Steel

This is the strongest grade of steel used in wire rope manufacture and naturally is a trifle stiffer than the preceding grades. It is recommended where great strength, lightness and abrasion resisting qualities are required. It is the toughest steel of its strength that can be produced and is fully three times as strong as Iron. Made of carefully selected steel having a minimum tensile strength of 230,000 lbs. per square inch of sectional area. It is identified from our other grades by having the galvanized strand throughout the entire length.

Transmission or Haulage Rope

“Transmission” and “Haulage” are terms that are applied to rope composed of six strands—seven wires to the strand. The demand for rope of this construction for transmission of power has lessened appreciably in recent years. The principal use to which it is now put is for haulage in mines, on inclined planes, on tramways and in the yards of manufacturing plants. It is also used for drilling and Sand Lines in certain districts by well drilling contractors.

By comparing the cut, page 7, with the Hoisting Rope cut on page 12 you will note the coarseness of wires. They are nearly twice as large. This is a desirable feature, as in haulage work for which service it is particularly applicable, it is dragged along the ground and over rough rollers, etc., being subjected to much abrasive wear. Finer wires would wear through and break much more quickly.

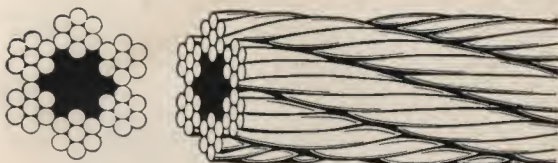
While the coarseness of the wires is an asset so far as abrasion is concerned, the rope is less flexible than one of the Hoisting Rope designs. This should be taken into consideration if the rope is to be subjected to much bending. For bending, where greater flexibility is required, ropes composed of finer wires are usually preferred.

Made in five grades, or strengths, as follows:

1. *Iron*
2. *Cast Steel*
3. *Extron Cast Steel*
4. *Plow Steel*
5. *Monitor Silver Strand Steel*

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



1

Iron

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.51	1 1/2	4 3/4	3.38	29.7	See page 65	See page 66
.43	1 3/8	4 1/4	2.84	25.2		
.36	1 1/4	4	2.34	21.		
.30	1 1/8	3 1/2	1.90	17.2		
.24	1	3	1.50	13.7		
.18 1/2	7/8	2 3/4	1.15	10.5		
.14	3/4	2 1/4	.84	7.86		
.10	5/8	2	.59	5.52		
.08 1/4	9/16	1 3/4	.48	4.49		
.06 1/2	1/2	1 1/2	.38	3.57		
.05 1/2	7/16	1 1/4	.29	2.76		
.04 1/2	3/8	1 1/8	.21	2.05		
.03 3/4	5/16	1	.15	1.43		
.03 1/4	9/32	7/8	.12	1.17		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

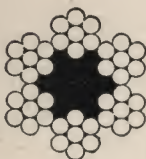
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



2

Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.60	1 1/2	4 3/4	3.38	62.5	See page 65	See page 66
.51	1 3/8	4 1/4	2.84	53.		
.43	1 1/4	4	2.34	44.5		
.36	1 1/8	3 1/2	1.90	36.4		
.29	1	3	1.50	29.		
.23	7/8	2 3/4	1.15	22.4		
.18 1/2	3/4	2 1/4	.84	16.5		
.13 1/2	5/8	2	.59	11.5		
.11 1/2	9/16	1 3/4	.48	9.4		
.09	1/2	1 1/2	.38	7.5		
.07	7/16	1 1/4	.29	5.8		
.05 3/4	3/8	1 1/8	.21	4.3		
.04 1/2	5/16	1	.15	3.1		
.04 1/4	9/32	7/8	.12	2.52		
.04	1/4	3/4	.094	2.		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

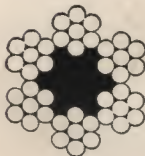
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



3

Extron Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.75	1 1/2	4 3/4	3.38	68.7	See page 65	See page 66
.64	1 3/8	4 1/4	2.84	58.2		
.53	1 1/4	4	2.34	48.7		
.44	1 1/8	3 1/2	1.90	40.		
.35	1	3	1.50	31.9		
.27	7/8	2 3/4	1.15	24.6		
.22	3/4	2 1/4	.84	18.1		
.16	5/8	2	.59	12.6		
.13 3/4	9/16	1 3/4	.48	10.3		
.10 1/2	1/2	1 1/2	.38	8.2		
.08 1/2	7/16	1 1/4	.29	6.3		
.06 3/4	3/8	1 1/8	.21	4.7		
.05 1/2	5/16	1	.15	3.35		
.05 1/4	9/32	7/8	.12	2.72		
.05	1/4	3/4	.094	2.15		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



4

Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.90	1 1/2	4 3/4	3.38	75.	See page 65	See page 66
.76	1 3/8	4 1/4	2.84	63.5		
.62	1 1/4	4	2.34	53.		
.51	1 1/8	3 1/2	1.90	43.6		
.41	1	3	1.50	34.8		
.32 1/2	7/8	2 3/4	1.15	26.8		
.26	3/4	2 1/4	.84	19.8		
.19	5/8	2	.59	13.8		
.16 1/4	9/16	1 3/4	.48	11.3		
.12 1/2	1/2	1 1/2	.38	9.		
.10 1/2	7/16	1 1/4	.29	6.9		
.08	3/8	1 1/8	.21	5.15		
.06 1/2	5/16	1	.15	3.65		
.06 1/4	9/32	7/8	.12	2.95		
.06	1/4	3/4	.094	2.35		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

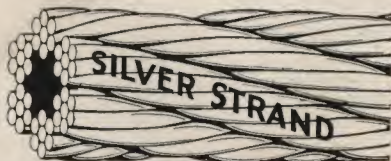
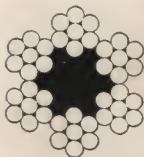
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



5

Monitor Silver Strand Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$1.05	1 1/2	4 3/4	3.38	86.5	See page 65	See page 66
.88	1 3/8	4 1/4	2.84	73.5		
.72	1 1/4	4	2.34	61.		
.58	1 1/8	3 1/2	1.90	50.		
.48	1	3	1.50	40.		
.37	7/8	2 3/4	1.15	30.8		
.28 1/2	3/4	2 1/4	.84	22.8		
.20 1/2	5/8	2	.59	16.		
.17	9/16	1 3/4	.48	13.		
.13 1/2	1/2	1 1/2	.38	10.3		
.11 1/2	7/16	1 1/4	.29	7.9		
.08 3/4	3/8	1 1/8	.21	5.9		
.08 1/4	5/16	1	.15	4.2		
.07 1/2	9/32	7/8	.12	3.4		
.07	1/4	3/4	.094	2.7		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

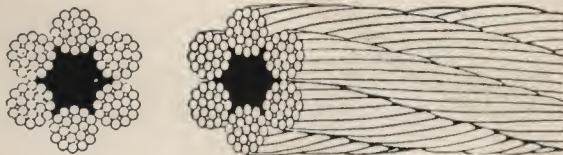
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



Type N

"Standard Hoisting" is a term applied to rope composed of six strands, nineteen wires to the strand. The wires being smaller than those in the 6x7 construction shown on page 7, the rope is more flexible, and can be more readily passed around sheaves and drums of moderate size. The component wires being finer, however, the 6x19 is not expected to stand as much abrasion as the coarser Haulage Rope.

The 6x19 rope is by far the most universally used. It is employed more extensively and in a greater variety of work than any construction that we manufacture. In the Iron and Traction Steel grades it is commonly used on passenger and freight elevators; while in the Cast Steel, Extron, Plow and Monitor Silver Strand grades it is used in mines, quarries, ore docks, coal docks, on cranes, dredges, steam shovels, pile drivers, derricks, tramways, cableways, and, in fact, on almost every known type of modern wire rope using apparatus, also for well drilling.

A careful scrutiny of the cross section of the standard hoisting rope illustrated above shows six individual strands around a hemp center, each strand being composed of one size of wire with fillers, same being known as "one sized wire type N" construction. Below are illustrations of three types that are sometimes used, viz.



Three-sized-
wire
Construction

One-sized-
wire
without Fillers

Seale
Patent

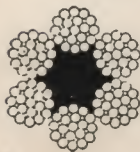
Each of these constructions imparts slightly different properties to the rope to meet special requirements in the field, i.e., One-sized-wire with filler for skidder work, etc.

Made in six grades or strengths as follows:

1. *Iron*
2. *Traction Steel*
3. *Cast Steel*
4. *Extron Cast Steel*
5. *Plow Steel*
6. *Monitor Silver Strand Steel*

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



6

Iron
Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$1.70	2 $\frac{3}{4}$	8 $\frac{5}{8}$	12.10	95.	See page 65	See page 66
1.40	2 $\frac{1}{2}$	7 $\frac{7}{8}$	10.	79.1		
1.17	2 $\frac{1}{4}$	7 $\frac{1}{8}$	8.10	64.8		
.95	2	6 $\frac{1}{4}$	6.40	51.8		
.88	1 $\frac{7}{8}$	5 $\frac{3}{4}$	5.63	45.8		
.80	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.90	40.1		
.65	1 $\frac{5}{8}$	5	4.23	34.8		
.57	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.60	29.7		
.49	1 $\frac{3}{8}$	4 $\frac{1}{4}$	3.03	25.2		
.40	1 $\frac{1}{4}$	4	2.50	21.		
.33	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.03	17.2		
.26	1	3	1.60	13.7		
.21	$\frac{7}{8}$	2 $\frac{3}{4}$	1.23	10.6		
.17	$\frac{3}{4}$	2 $\frac{1}{4}$	.90	7.86	
.13 $\frac{1}{2}$	$\frac{5}{8}$	2	.63	5.52		
.11 $\frac{1}{2}$	$\frac{9}{16}$	1 $\frac{3}{4}$	.51	4.49	
.09 $\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	.40	3.57	
.08 $\frac{1}{2}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.31	2.76	
.07 $\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.23	2.05	
.06 $\frac{3}{4}$	$\frac{5}{16}$	1	.16	1.43		
.06 $\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	.10	.97	

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

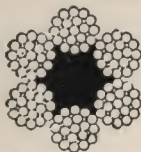
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

For 6x19 Elevator rope see page 14.

Standard Elevator Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core

**6A****Iron Elevator Rope—Type N**

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.26	1	3	1.60	13.7	See page 65	See page 66
.21	$\frac{7}{8}$	$2\frac{3}{4}$	1.23	10.6		
.17	$\frac{3}{4}$	$2\frac{1}{4}$	.90	7.86	
$.13\frac{1}{2}$	$\frac{5}{8}$	2	.63	5.52		
$.11\frac{1}{2}$	$\frac{9}{16}$	$1\frac{3}{4}$	.51	4.49	
$.09\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	.40	3.57	
$.08\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$	.31	2.76	
$.07\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.23	2.05	
$.06\frac{3}{4}$	$\frac{5}{16}$	1	.16	1.43		
$.06\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	.10	.97	
$.06\frac{1}{4}$	$\frac{3}{16}$	$\frac{9}{16}$	.06	.55	

7**Traction Steel Elevator Rope**

\$0.31	1	3	1.60	27.	See page 65	See page 66
.25	$\frac{7}{8}$	$2\frac{3}{4}$	1.23	21.		
$.20\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{4}$	.90	16.	
$.15\frac{3}{4}$	$\frac{5}{8}$	2	.63	11.5		
$.13\frac{3}{4}$	$\frac{9}{16}$	$1\frac{3}{4}$	.51	9.25	
.12	$\frac{1}{2}$	$1\frac{1}{2}$	.40	7.25	
$.10\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$.31	5.5	See page 65	See page 66
$.09\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.23	4.1	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Composite Iron

This special construction is designed principally for elevator service. The list prices are the same as that shown above for Traction Steel.

Iron Floor Selector Cable

These cables are generally supplied in sizes $\frac{1}{8}$ ", $\frac{1}{4}$ " and $\frac{3}{8}$ " dia. Two constructions are in common use, i.e., 6x19 and 8x19.

The list prices for 6 x 19 are shown above under table 6A. For 8 x 19, see page 20.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core

Cast Steel
Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$2.10	2 $\frac{3}{4}$	8 $\frac{5}{8}$	12.10	212.	See page 65	See page 66
1.75	2 $\frac{1}{2}$	7 $\frac{7}{8}$	10.	176.		
1.44	2 $\frac{1}{4}$	7 $\frac{1}{8}$	8.10	144.		
1.16	2	6 $\frac{1}{4}$	6.40	114.		
1.02	1 $\frac{7}{8}$	5 $\frac{3}{4}$	5.63	100.		
.90	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.90	88.		
.77	1 $\frac{5}{8}$	5	4.23	76.		
.66	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.60	65.		
.56	1 $\frac{3}{8}$	4 $\frac{1}{4}$	3.03	55.		
.46	1 $\frac{1}{4}$	4	2.50	46.		
.38	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.03	37.		
.31	1	3	1.60	29.5		
.25	$\frac{7}{8}$	2 $\frac{3}{4}$	1.23	22.8		
.20 $\frac{1}{2}$	$\frac{3}{4}$	2 $\frac{1}{4}$	.90	16.8	
.15 $\frac{3}{4}$	$\frac{5}{8}$	2	.63	11.8		
.13 $\frac{3}{4}$	$\frac{9}{16}$	1 $\frac{3}{4}$	.51	9.6	
.12	$\frac{1}{2}$	1 $\frac{1}{2}$	.40	7.7	
.10 $\frac{1}{2}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.31	6.	
.09 $\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.23	4.5	
.09 $\frac{1}{4}$	$\frac{5}{16}$	1	.16	3.2		
.09	$\frac{1}{4}$	$\frac{3}{4}$	.10	2.1	

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

For 6x17 type L—6x21 type M, use 6x19 list prices as shown above.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



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Extron Cast Steel Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$2.55	2 ³ / ₄	8 ⁵ / ₈	12.10	234.	See page 65	See page 66
2.10	2 ¹ / ₂	7 ⁷ / ₈	10.	195.		
1.70	2 ¹ / ₄	7 ¹ / ₈	8.10	160.		
1.34	2	6 ¹ / ₄	6.40	127.		
1.25	1 ⁷ / ₈	5 ³ / ₄	5.63	112.		
1.10	1 ³ / ₄	5 ¹ / ₂	4.90	98.		
.94	1 ⁵ / ₈	5	4.23	85.		
.80	1 ¹ / ₂	4 ³ / ₄	3.60	72.5		
.68	1 ³ / ₈	4 ¹ / ₄	3.03	61.5		
.56	1 ¹ / ₄	4	2.50	51.		
.46	1 ¹ / ₈	3 ¹ / ₂	2.03	41.5		
.37	1	3	1.60	33.		
.29	⁷ / ₈	2 ³ / ₄	1.23	25.4		
.24	³ / ₄	2 ¹ / ₄	.90	18.7		
.18	⁵ / ₈	2	.63	13.1		
.15 ³ / ₄	⁹ / ₁₆	1 ³ / ₄	.51	10.6		
.13 ³ / ₄	¹ / ₂	1 ¹ / ₂	.40	8.5		
.12	⁷ / ₁₆	1 ¹ / ₄	.31	6.6		
.11	³ / ₈	1 ¹ / ₈	.23	5.		
.10 ³ / ₄	⁵ / ₁₆	1	.16	3.5		
.10 ¹ / ₂	¹ / ₄	³ / ₄	.10	2.3		

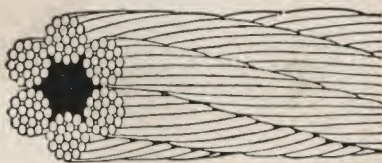
Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.
Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 ¹/₂%.

For 6x17 type L—6x21 type M, use 6x19 list prices as shown above.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



10

Plow Steel Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$3.00	2 $\frac{3}{4}$	8 $\frac{5}{8}$	12.10	256.	See page 65	See page 66
2.50	2 $\frac{1}{2}$	7 $\frac{7}{8}$	10.	214.		
2.00	2 $\frac{1}{4}$	7 $\frac{1}{8}$	8.10	176.		
1.58	2	6 $\frac{1}{4}$	6.40	140.		
1.46	1 $\frac{7}{8}$	5 $\frac{3}{4}$	5.63	123.		
1.30	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.90	108.		
1.08	1 $\frac{5}{8}$	5	4.23	94.		
.93	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.60	80.5		
.79	1 $\frac{3}{8}$	4 $\frac{1}{4}$	3.03	68.		
.65	1 $\frac{1}{4}$	4	2.50	56.5		
.54	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.03	46.		
.43	1	3	1.60	36.5		
.34 $\frac{1}{2}$	$\frac{7}{8}$	2 $\frac{3}{4}$	1.23	28.		
.28	$\frac{3}{4}$	2 $\frac{1}{4}$	.90	20.6	
.21	$\frac{5}{8}$	2	.63	14.4		
.18 $\frac{1}{4}$	$\frac{9}{16}$	1 $\frac{3}{4}$	.51	11.7	
.16	$\frac{1}{2}$	1 $\frac{1}{2}$	.40	9.4	
.14	$\frac{7}{16}$	1 $\frac{1}{4}$	.31	7.3	
.13	$\frac{3}{8}$	1 $\frac{1}{8}$	.23	5.5	
.12 $\frac{1}{4}$	$\frac{5}{16}$	1	.16	3.9		
.12	$\frac{1}{4}$	$\frac{3}{4}$	.10	2.5	

Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

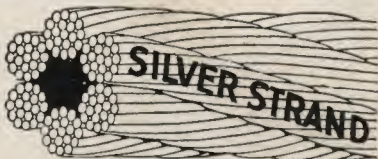
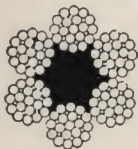
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

For 6 x 17 type L—6 x 21 type M use 6 x 19 list prices as shown above.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



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Monitor Silver Strand Steel
Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$3.45	2 $\frac{3}{4}$	8 $\frac{5}{8}$	12.10	294.	See page 65	See page 66
2.80	2 $\frac{1}{2}$	7 $\frac{7}{8}$	10.	246.		
2.50	2 $\frac{1}{4}$	7 $\frac{1}{8}$	8.10	202.		
1.85	2	6 $\frac{1}{4}$	6.40	161.		
1.75	1 $\frac{7}{8}$	5 $\frac{3}{4}$	5.63	142.		
1.60	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.90	124.		
1.30	1 $\frac{5}{8}$	5	4.23	108.		
1.10	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.60	92.5		
.90	1 $\frac{3}{8}$	4 $\frac{1}{4}$	3.03	78.5		
.75	1 $\frac{1}{4}$	4	2.50	65.		
.62	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.03	53.		
.50	1	3	1.60	42.		
.39	$\frac{7}{8}$	2 $\frac{3}{4}$	1.23	32.2		
.31	$\frac{3}{4}$	2 $\frac{1}{4}$	.90	23.7	
.22 $\frac{1}{2}$	$\frac{5}{8}$	2	.63	16.6		
.19	$\frac{9}{16}$	1 $\frac{3}{4}$	.51	13.5	
.17	$\frac{1}{2}$	1 $\frac{1}{2}$	.40	10.8	
.15 $\frac{1}{2}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.31	8.4	
.14 $\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.23	6.3	
.13 $\frac{1}{2}$	$\frac{5}{16}$	1	.16	4.5		
.13	$\frac{1}{4}$	$\frac{3}{4}$	.10	2.9	

Intermediate sizes of wire rope are to take the list price of the next larger size.

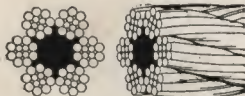
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Rope made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

For 6 x 17 type L—6 x 21 type M use 6 x 19 list price as shown above.

Special Ropes

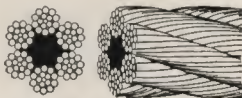


6 Strands—17 Wires to the Strand—1 Hemp Core

Type L. This construction with eight outer wires in each strand is a rugged rope more flexible than 6 x 7 which has six outer wires per strand, and less flexible than 6 x 21 and 6 x 19. The large outside wires make it an excellent rope for installations where abrasion is severe.

For list prices and weights, use those shown for 6 x 19, pages 15 to 18.

Breaking strengths are 3% less than 6 x 19 of the same size and grade.

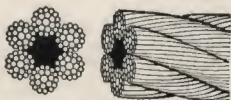


6 Strands—21 Wires to the Strand—1 Hemp Core

Type M. More flexible than the 6 x 17 and especially recommended for Drag Lines. It will stand more wear than 6 x 19 because of the larger outside wires.

For list prices and weights, use those shown for 6 x 19, pages 15 to 18.

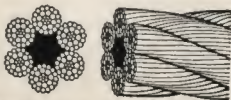
Breaking strengths are 3% less than 6 x 19 of the same size and grade.



6 Strands—29 Wires to the Strand—1 Hemp Core

Type P. An excellent rope for Clamshell buckets, steam shovels, and general hoisting purposes requiring a greater degree of flexibility than standard 6 x 19.

For list prices, weights and breaking strengths, use those shown for 6 x 37, pages 27 to 30.



6 Strands—33 Wires to the Strand—1 Hemp Core

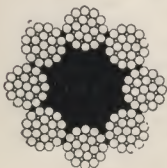
Type R. This construction gives excellent service on cranes where abrasion is too severe for 6 x 37. The wires are a little larger than those in 6 x 37.

For list prices, weights and breaking strengths, use those shown for 6 x 37, pages 27 to 30.

All of the above ropes can be furnished in four grades, namely, Cast Steel, Extron Cast Steel, Plow Steel and Monitor Silver Strand Steel, but in most cases Monitor Silver Strand will give the best service.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



"Extra Flexible" is a term applied to rope composed of eight strands, nineteen wires to the strand. It will be noted that this construction contains two more strands than the Standard Hoisting Rope illustrated on page 12.

The addition of these two strands adds greatly to the flexibility of the rope, and permits of the rope being used over comparatively small sheaves and drums.

Made in six grades or strengths as follows:

1. *Iron*
2. *Traction Steel*
3. *Cast Steel*
4. *Extron Cast Steel*
5. *Plow Steel*
6. *Monitor Silver Strand Steel*

12

Iron

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.29	1	3	1.45	12.2	See page 65	See page 66
.23	$\frac{7}{8}$	$2\frac{3}{4}$	1.11	9.4		
.19 $\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{4}$	.82	6.95	
.15 $\frac{1}{2}$	$\frac{5}{8}$	2	.57	4.86		
.13	$\frac{9}{16}$	$1\frac{3}{4}$	.46	4.06	
.11	$\frac{1}{2}$	$1\frac{1}{2}$	.36	3.28	
.09 $\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$	.27	2.4	
.08 $\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.20	1.6	
.074	$\frac{5}{16}$	1	.13	1.1		
.07	$\frac{1}{4}$	$\frac{3}{4}$	.09	.8	

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Iron Floor Selector Cable

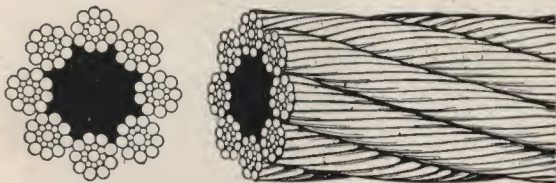
These cables are generally supplied in sizes $\frac{5}{16}$ ", $\frac{1}{4}$ " and $\frac{3}{16}$ " dia. Two constructions are in common use, i.e., 6x19 and 8x19.

The list prices for the 6x19 construction are given on page 14.

Prices for the 8x19 are shown above.

Seale Patent Special Steel Traction Elevator Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



Seale Patent Traction Elevator Rope is a rope designed specially to give maximum resilience, flexibility and tractive effort, combined with smooth running qualities. This Rope gives excellent service on all "U" and "V" groove traction installations. These ropes give additional wearing surface owing to the somewhat larger wires, less wear on the sheaves and drums due to better contact and less slippage. Altogether, this rope possesses many desirable features not found in other styles of elevator ropes.

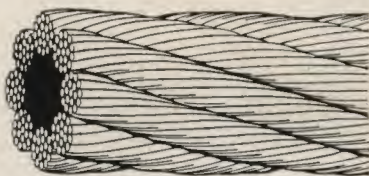
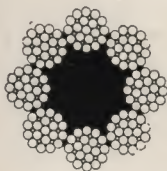
12A

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.34	1	3	1.45	25.	See Page 65	See page 66
.28	$\frac{7}{8}$	$2\frac{3}{4}$	1.11	19.		
.23	$\frac{3}{4}$	$2\frac{1}{4}$	.82	14.	
$.17\frac{1}{2}$	$\frac{5}{8}$	2	.57	10.		
$.15\frac{1}{2}$	$\frac{9}{16}$	$1\frac{3}{4}$	.46	8.	
$.13\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	.36	6.5	
.12	$\frac{7}{16}$	$1\frac{1}{4}$	.28	5.	
$.10\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.20	3.7	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



13

Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.73	1 1/2	4 3/4	3.26	57.5	See page 65	See page 66
.62	1 3/8	4 1/4	2.74	48.6		
.51	1 1/4	4	2.27	40.4		
.42	1 1/8	3 1/2	1.84	32.8		
.34	1	3	1.45	26.		
.28	7/8	2 3/4	1.11	20.		
.23	3/4	2 1/4	.82	14.8		
.17 1/2	5/8	2	.57	10.4		
.15 1/2	9/16	1 3/4	.46	8.5		
.13 1/2	1/2	1 1/2	.36	6.8		
.12	7/16	1 1/4	.28	5.3		
.10 1/2	3/8	1 1/8	.20	3.94		
.10 1/4	5/16	1	.14	2.79		
.10	1/4	3/4	.09	1.79		

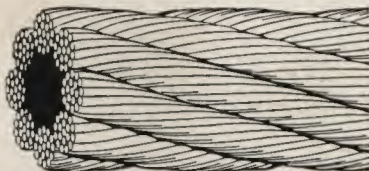
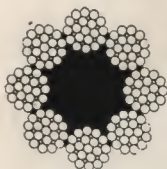
Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

For Elevator rope list prices see page 21.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



14

Extron Cast Steel

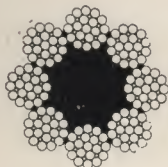
List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.88	1 1/2	4 3/4	3.26	63.3	See page 65	See page 66
.75	1 3/8	4 1/4	2.74	53.4		
.62	1 1/4	4	2.27	44.4		
.51	1 1/8	3 1/2	1.84	36.		
.41	1	3	1.45	28.6		
.34	7/8	2 3/4	1.11	22.		
.27 1/4	3/4	2 1/4	.82	16.3		
.20 1/2	5/8	2	.57	11.4		
.18	9/16	1 3/4	.46	9.4		
.15 1/2	1/2	1 1/2	.36	7.5		
.14 1/4	7/16	1 1/4	.28	5.8		
.12 1/2	3/8	1 1/8	.20	4.33		
.12 1/4	5/16	1	.14	3.07		
.12	1/4	3/4	.09	1.97		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



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Plow Steel

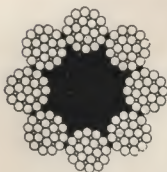
List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.06	1 1/2	4 3/4	3.26	69.	See page 65	See page 66
.90	1 3/8	4 1/4	2.74	58.3		
.75	1 1/4	4	2.27	48.4		
.62	1 1/8	3 1/2	1.84	39.4		
.50	1	3	1.45	31.2		
.41	7/8	2 3/4	1.11	24.		
.32 1/2	3/4	2 1/4	.82	17.8		
.24	5/8	2	.57	12.5		
.21	9/16	1 3/4	.46	10.3		
.18 1/4	1/2	1 1/2	.36	8.2		
.17	7/16	1 1/4	.28	6.3		
.15	3/8	1 1/8	.20	4.7		
.14 1/2	5/16	1	.14	3.34		
.14 1/4	1/4	3/4	.09	2.15		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



16

Monitor Silver Strand Steel

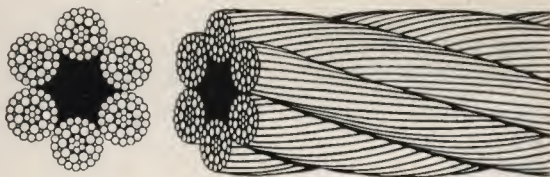
List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$1.19	1 1/2	4 3/4	3.26	79.5	See Page 65	See Page 66
.98	1 3/8	4 1/4	2.74	67.		
.82	1 1/4	4	2.27	55.7		
.68	1 1/8	3 1/2	1.84	45.2		
.55	1	3	1.45	35.8		
.43	7/8	2 3/4	1.11	27.6		
.34	3/4	2 1/4	.82	20.5		
.25	5/8	2	.57	14.4		
.22	9/16	1 3/4	.46	11.8		
.19	1/2	1 1/2	.36	9.5		
.17 1/2	7/16	1 1/4	.28	7.3		
.16 1/2	3/8	1 1/8	.20	5.45		
.16	5/16	1	.14	3.85		
.15 3/4	1/4	3/4	.09	2.47		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



Type S

“Special Flexible” is a term applied to rope composed of six strands, thirty-seven wires to the strand. It is a very flexible rope and much used on cranes and similar machinery, where rope is operated at high speed and where sheaves and drums are of necessity small. Its wires are smaller than those in the Standard Hoisting construction, shown on page 12, and consequently will not stand as much abrasive wear.

It is a very efficient rope because a little over fifty per cent of the wires—and consequently over fifty per cent of the strength—are in the inner layers of the strand, protected from abrasion. This explains its particular advantage in addition to its flexibility.

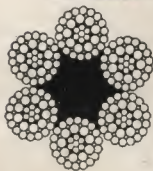
Ropes larger than $1\frac{3}{4}$ inch diameter, used on hoisting apparatus, are usually made of this construction rather than 6 x 19.

Made in four grades, i.e.:

1. *Cast Steel*
2. *Extron Cast Steel*
3. *Plow Steel*
4. *Monitor Silver Strand Steel*

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



17

Cast Steel Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$3.75	3 1/2	11	19.	323.	See page 65	See page 66
3.25	3 1/4	10 1/4	16.37	281.		
2.75	3	9 1/2	13.95	241.		
2.30	2 3/4	8 5/8	11.72	204.		
1.92	2 1/2	7 7/8	9.69	170.		
1.60	2 1/4	7 1/8	7.85	139.		
1.48	2 1/8	6 3/4	7.	125.		
1.35	2	6 1/4	6.20	111.		
1.20	1 7/8	5 3/4	5.45	98.		
1.05	1 3/4	5 1/2	4.75	86.		
.89	1 5/8	5	4.09	74.3		
.79	1 1/2	4 3/4	3.49	63.5		
.65	1 3/8	4 1/4	2.93	53.5		
.55	1 1/4	4	2.42	44.3		
.46	1 1/8	3 1/2	1.96	36.		
.37	1	3	1.55	28.6		
.30	7/8	2 3/4	1.19	22.		
.24	3/4	2 1/4	.87	16.4		
.18 1/2	5/8	2	.61	11.6		
.16 1/2	9/16	1 3/4	.49	9.5		
.14	1/2	1 1/2	.39	7.7		
.12 1/2	7/16	1 1/4	.30	6.		
.12	3/8	1 1/8	.22	4.4		

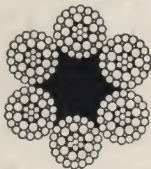
Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices. Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P-6x33 type R-6x41 type T use 6x37 list prices as shown above.

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



18

Extron Cast Steel—Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$4.60	3 1/2	11	19.	357.	See page 65	See page 66
3.95	3 1/4	10 1/4	16.37	311.		
3.35	3	9 1/2	13.95	267.		
2.80	2 3/4	8 5/8	11.72	226.		
2.35	2 1/2	7 7/8	9.69	188.		
1.90	2 1/4	7 1/8	7.85	153.		
1.70	2 1/8	6 3/4	7.00	138.		
1.55	2	6 1/4	6.20	123.		
1.40	1 7/8	5 3/4	5.45	108.5		
1.28	1 3/4	5 1/2	4.75	95.		
1.07	1 5/8	5	4.09	82.		
.95	1 1/2	4 3/4	3.49	70.		
.78	1 3/8	4 1/4	2.93	59.		
.65	1 1/4	4	2.42	48.9		
.55	1 1/8	3 1/2	1.96	39.7		
.44	1	3	1.55	31.5		
.36	7/8	2 3/4	1.19	24.2		
.28 1/2	3/4	2 1/4	.87	18.1		
.21 1/2	5/8	2	.61	12.8		
.19 1/4	9/16	1 3/4	.49	10.5		
.16 1/4	1/2	1 1/2	.39	8.4		
.15	7/16	1 1/4	.30	6.6		
.14 1/4	3/8	1 1/8	.22	4.9		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

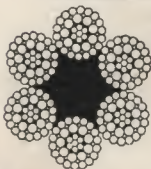
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P—6x33 type R—6x4; type T use 6x37 list prices as shown above.

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



19

Plow Steel—Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$5.35	3 1/2	11	19.	392.	<i>See page 65</i>	<i>See page 66</i>
4.65	3 1/4	10 1/4	16.37	341.		
3.95	3	9 1/2	13.95	293.		
3.30	2 3/4	8 5/8	11.72	248.		
2.75	2 1/2	7 7/8	9.69	206.		
2.20	2 1/4	7 1/8	7.85	168.		
2.00	2 1/8	6 3/4	7.	151.		
1.80	2	6 1/4	6.20	135.		
1.65	1 7/8	5 3/4	5.45	119.		
1.50	1 3/4	5 1/2	4.75	104.		
1.25	1 5/8	5	4.09	89.8		
1.15	1 1/2	4 3/4	3.49	76.7		
.93	1 3/8	4 1/4	2.93	64.6		
.78	1 1/4	4	2.42	53.5		
.66	1 1/8	3 1/2	1.96	43.5		
.52 1/2	1	3	1.55	34.4		
.43	7/8	2 3/4	1.19	26.5		
.34	3/4	2 1/4	.87	19.8		
.25	5/8	2	.61	14.		
.22 1/2	9/16	1 3/4	.49	11.5		
.19	1/2	1 1/2	.39	9.2		
.17 3/4	7/16	1 1/4	.30	7.2		
.17	3/8	1 1/8	.22	5.3		

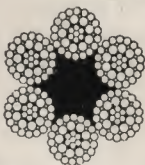
Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices. Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P—6x33 type R—6x41 type T use 6x37 list prices as shown above.

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core

**20**

Monitor Silver Strand Steel—Type S

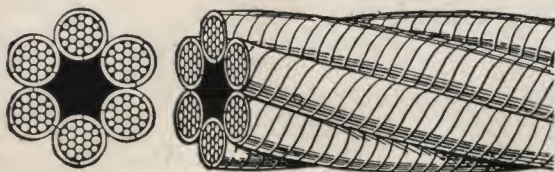
List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$6.10	3 1/2	11	19.	451.	See page 65	See page 66
5.25	3 1/4	10 1/4	16.37	392.		
4.50	3	9 1/2	13.95	337.		
3.75	2 3/4	8 5/8	11.72	285.		
3.15	2 1/2	7 7/8	9.69	237.		
2.75	2 1/4	7 1/8	7.85	194.		
2.40	2 1/8	6 3/4	7.	174.		
2.10	2	6 1/4	6.20	155.		
1.90	1 7/8	5 3/4	5.45	137.		
1.75	1 3/4	5 1/2	4.75	119.5		
1.45	1 5/8	5	4.09	103.3		
1.25	1 1/2	4 3/4	3.49	88.2		
1.05	1 3/8	4 1/4	2.93	74.3		
.86	1 1/4	4	2.42	61.5		
.75	1 1/8	3 1/2	1.96	49.9		
.59	1	3	1.55	39.5		
.46	7/8	2 3/4	1.19	30.5		
.36	3/4	2 1/4	.87	22.8		
.27	5/8	2	.61	16.1		
.23	9/16	1 3/4	.49	13.2		
.20	1/2	1 1/2	.39	10.6		
.18 1/2	7/16	1 1/4	.30	8.3		
.17 1/2	3/8	1 1/8	.22	6.1		

Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6 x 29 type P—6 x 33 type R—6 x 41 type T use 6 x 37 list prices as shown above.



Steel Clad Hoisting Rope

"Steel Clad Hoisting Rope" is a term applied to regular round strand rope, the strands of which have been given an external serving of flat strip steel. This flat steel strip does not increase the tensile strength of the rope but gives additional wearing service without sacrificing the flexibility in any way. When the outer flat steel winding is worn through in service, a complete hoisting rope remains with unimpaired strength, the strip having served to protect the inner wires from all wear up to this point. When thoroughly worn, the strip naturally crowds down between the strands of the rope, thus providing additional wearing surface.

Ropes of this construction may be used for unusually severe conditions where the additional wearing surface due to the flat strips materially increases the durability of the rope thus employed. It is used especially on high duty dredges, steam shovels, drag line excavators, and the like.

In view of the fact that a steel clad rope is only as strong as the plain bare rope, care should be exercised so that no error is made in the strength. Users needing a line that has the strength of a 1 inch ordinary standard Plow steel will have to use $1\frac{1}{8}$ inch Steel Clad of the same grade and construction in order to secure the same strength. This for the reason that the exterior serving of flat steel adds nothing to the strength.

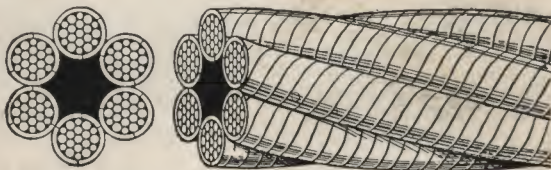
It naturally follows that before ordering Steel Clad for the first time, one must look carefully to his equipment to see if the sheaves and drums will accommodate the larger diameter of rope. Usually they will, especially if a little worn.

In ordering, always specify the outside diameter, as we will understand that this is the intention in the absence of anything to the contrary.

Made in two grades, i.e.: 1. *Plow Steel*. 2. *Monitor Silver Strand Steel*.

Steel Clad Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



27

Plow Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$2.14	2 1/4	2	7.82	140.	See page 65	See page 66
1.87	2 1/16	1 7/8	7.01	123.		
1.68	1 15/16	1 3/4	6.05	108.		
1.42	1 13/16	1 5/8	5.39	94.		
1.25	1 11/16	1 1/2	4.66	80.5		
1.09	1 9/16	1 3/8	3.99	68.		
.93	1 7/16	1 1/4	3.35	56.5		
.79	1 5/16	1 1/8	2.75	46.		
.66	1 3/16	1	2.23	36.5		
.55	1	7/8	1.66	28.		
.46	7/8	3/4	1.40	20.6		
.37	3/4	5/8	1.05	14.4		
.30	5/8	1/2	.64	9.4		

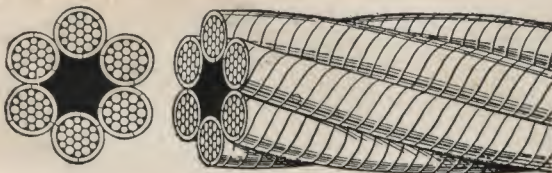
Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Steel Clad Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



28

Monitor Silver Strand Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$2.40	2 1/4	2	7.82	161.	See page 65	See page 66
2.15	2 1/16	1 7/8	7.01	142.		
1.97	1 15/16	1 3/4	6.05	124.		
1.64	1 13/16	1 5/8	5.39	108.		
1.41	1 11/16	1 1/2	4.66	92.5		
1.19	1 9/16	1 3/8	3.99	78.5		
1.02	1 7/16	1 1/4	3.35	65.		
.86	1 5/16	1 1/8	2.75	53.		
.72	1 3/16	1	2.23	42.		
.59	1	7/8	1.66	32.2		
.51	7/8	3/4	1.40	23.7		
.40	3/4	5/8	1.05	16.6		
.34	5/8	1/2	.64	10.8		

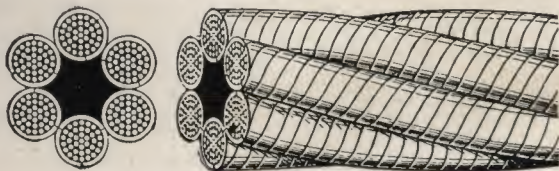
Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Steel Clad, Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



31

Plow Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$2.90	2 $\frac{1}{2}$	2 $\frac{1}{4}$	10.03	168.	See page 65	See page 66
2.38	2 $\frac{1}{4}$	2	7.82	135.		
2.08	2 $\frac{1}{16}$	1 $\frac{7}{8}$	7.01	119.		
1.90	1 $\frac{15}{16}$	1 $\frac{3}{4}$	6.05	104.		
1.62	1 $\frac{13}{16}$	1 $\frac{5}{8}$	5.39	89.8		
1.44	1 $\frac{11}{16}$	1 $\frac{1}{2}$	4.66	76.7		
1.23	1 $\frac{9}{16}$	1 $\frac{3}{8}$	3.99	64.6		
1.04	1 $\frac{7}{16}$	1 $\frac{1}{4}$	3.35	53.5		
.90	1 $\frac{5}{16}$	1 $\frac{1}{8}$	2.75	43.5		
.75	1 $\frac{3}{16}$	1	2.23	34.4		
.62	1	$\frac{7}{8}$	1.66	26.5		

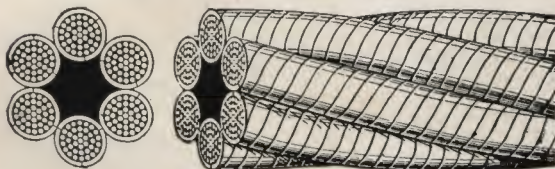
Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Steel Clad, Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



32

Monitor Silver Strand Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$3.20	2 $\frac{1}{2}$	2 $\frac{1}{4}$	10.03	194.	See page 65	See page 66
2.66	2 $\frac{1}{4}$	2	7.82	155.		
2.33	2 $\frac{1}{16}$	1 $\frac{7}{8}$	7.01	137.		
2.14	1 $\frac{15}{16}$	1 $\frac{3}{4}$	6.05	119.5		
1.80	1 $\frac{13}{16}$	1 $\frac{5}{8}$	5.39	103.3		
1.57	1 $\frac{11}{16}$	1 $\frac{1}{2}$	4.66	88.2		
1.35	1 $\frac{9}{16}$	1 $\frac{3}{8}$	3.99	74.3		
1.14	1 $\frac{7}{16}$	1 $\frac{1}{4}$	3.35	61.5		
1.00	1 $\frac{5}{16}$	1 $\frac{1}{8}$	2.75	49.9		
.82	1 $\frac{3}{16}$	1	2.23	39.5		
.67	1	$\frac{7}{8}$	1.66	30.5		

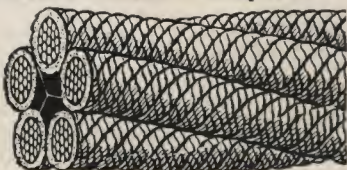
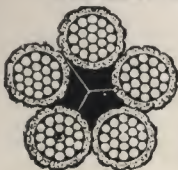
Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Marlin Clad Wire Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



"Marlin Clad" is a round strand rope, the strands of which have been given an external serving of tarred marlin. The usual number of wires in a strand in seven or nineteen, and number of strands, four, five or six.

This rope is particularly adapted for Ships' Rigging, Cargo Hoist, Power Transmission, Grain Shovels, etc. Marlin Clad Rope is considerably stronger than Manila Rope of the same diameter. For instance, 1 inch diameter Marlin Clad plow steel rope has a strength of 26,400 pounds, and the strength of 1 inch diameter Manila rope is 7,500 pounds. Marlin Clad Rope weighs approximately 30 per cent less than Manila rope of the same strength.

38

Cast Steel

List Price per Foot	Diameter in Inches before Serving	Approximate Diameter after Serving with Marlin	Approximate Circumference after Serving with Marlin	Breaking Strength in Tons of 2000 Lbs.	Allowable Working Strain	Minimum Size of Drum or Sheave	Approx. Weight per Foot in Lbs.
\$1.85	1 $\frac{3}{4}$	2 $\frac{1}{8}$	6 $\frac{5}{8}$	81.	See page 65	See page 66	5.00
1.62	1 $\frac{5}{8}$	2	6 $\frac{1}{4}$	70.			4.29
1.45	1 $\frac{1}{2}$	1 $\frac{7}{8}$	5 $\frac{7}{8}$	60.			3.69
1.24	1 $\frac{3}{8}$	1 $\frac{3}{4}$	5 $\frac{1}{2}$	50.5			3.14
1.04	1 $\frac{1}{4}$	1 $\frac{5}{8}$	5 $\frac{1}{8}$	42.			2.58
.85	1 $\frac{1}{8}$	1 $\frac{1}{2}$	4 $\frac{3}{4}$	34.			2.12
.75	1	1 $\frac{3}{8}$	4 $\frac{5}{16}$	27.			1.70
.66	$\frac{7}{8}$	1 $\frac{1}{4}$	3 $\frac{7}{8}$	21.			1.32
.55	$\frac{3}{4}$	1 $\frac{1}{8}$	3 $\frac{1}{2}$	15.4			1.10
.42	$\frac{5}{8}$	1	3 $\frac{1}{8}$	10.8			.81
.38	$\frac{9}{16}$	$\frac{7}{8}$	2 $\frac{3}{4}$	8.8			.62
.34	$\frac{1}{2}$	$\frac{13}{16}$	2 $\frac{1}{2}$	7.1			.51
.30 $\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{4}$	2 $\frac{3}{8}$	5.5			.42
.27	$\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{1}{8}$	4.1			.36
.24 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{5}{8}$	2	2.9			.28
.22	$\frac{1}{4}$	$\frac{9}{16}$	1 $\frac{3}{4}$	1.9			.21

Intermediate sizes of wire rope are to take the list price of the next larger size.

*For list price of six strands or wire center add 20 per cent to the above list.

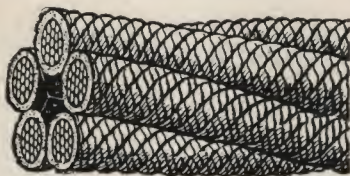
Breaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to above list prices.

Marlin Clad Hoisting Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



39

Extron Cast Steel

List Price per Foot	Diameter in Inches before Serving	Approximate Diameter after Serving with Marlin	Approximate Circumference after Serving with Marlin	Breaking Strength in Tons of 2000 Lbs.	Proper Work- ing Load	Minimum Size of Drum or Sheave	Approx. Weight per Foot in Lbs.
\$2.04	1 ³ / ₄	2 ¹ / ₈	6 ⁵ / ₈	90.	See page 65	See page 66	5.00
1.78	1 ⁵ / ₈	2	6 ¹ / ₄	78.			4.29
1.60	1 ¹ / ₂	1 ⁷ / ₈	5 ⁷ / ₈	66.5			3.69
1.36	1 ³ / ₈	1 ³ / ₄	5 ¹ / ₂	56.5			3.14
1.15	1 ¹ / ₄	1 ⁵ / ₈	5 ¹ / ₈	47.			2.58
.95	1 ¹ / ₈	1 ¹ / ₂	4 ³ / ₄	38.			2.12
.83	1	1 ³ / ₈	4 ⁵ / ₁₆	30.3			1.70
.73	⁷ / ₈	1 ¹ / ₄	3 ⁷ / ₈	23.3			1.32
.61	³ / ₄	1 ¹ / ₈	3 ¹ / ₂	17.1			1.10
.47	⁵ / ₈	1	3 ¹ / ₈	12.			.81
.42	⁹ / ₁₆	⁷ / ₈	2 ³ / ₄	9.7			.62
.36	¹ / ₂	1 ³ / ₁₆	2 ¹ / ₂	7.8			.51
.33	⁷ / ₁₆	³ / ₄	2 ³ / ₈	6.1			.42
.30	³ / ₈	1 ¹ / ₁₆	2 ¹ / ₈	4.6			.36
.27	⁵ / ₁₆	⁵ / ₈	2	3.2			.28
.24	¹ / ₄	⁹ / ₁₆	1 ³ / ₄	2.1			.21

Intermediate sizes of wire rope are to take the list price of the next larger size.
 *For list price of six strands or wire center add 20 per cent to the above list.

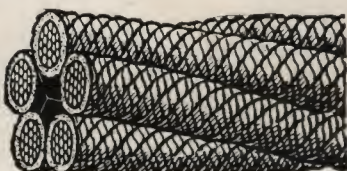
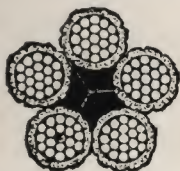
Breaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to above list prices.

Marlin Clad Hoisting Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



40

Plow Steel

List Price per Foot	Diameter in Inches before Serving	Approximate Diameter after Serving with Marlin	Approximate Circumference after Serving with Marlin	Breaking Strength in Tons of 2000 Lbs.	Proper Working Load	Minimum Size of Drum or Sheave	Approximate Weight per Foot in Lbs.
\$2.20	1 3/4	2 1/8	6 5/8	99.	See page 65	See page 66	5.00
1.90	1 5/8	2	6 1/4	86.			4.29
1.70	1 1/2	1 7/8	5 7/8	74.			3.69
1.46	1 3/8	1 3/4	5 1/2	62.5			3.14
1.22	1 1/4	1 5/8	5 1/8	52.			2.58
1.02	1 1/8	1 1/2	4 3/4	42.			2.12
.89	1	1 3/8	4 5/16	33.5			1.70
.79	7/8	1 1/4	3 7/8	25.7			1.32
.66	3/4	1 1/8	3 1/2	18.9			1.10
.51	5/8	1	3 1/8	13.2			.81
.45	9/16	7/8	2 3/4	10.7			.62
.38	1/2	13/16	2 1/2	8.6			.51
.35	7/16	3/4	2 3/8	6.7			.42
.32	3/8	11/16	2 1/8	5.0			.36
.29	5/16	5/8	2	3.6			.28
.26	1/4	9/16	1 3/4	2.3			.21

Intermediate sizes of wire rope are to take the list price of the next larger size.

*For list price of six strands or wire center add 20 per cent to the above list.

Breaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to list prices.

Marlin Clad Rope

Special Construction

Marlin Clad Hawser Rope**5 Strands—35 Wires to the Strand—Six Hemp Cores**

This rope is made of 5 separate ropes around a hemp core, each rope consisting of 5 strands—7 wires to the strand—one hemp core, and covered with an external serving of tarred marlin.

41

Cast Steel	Extron Cast Steel	Plow	Diameter of Each of 5 Component Ropes in Inches	Approx. Outside Dia. of Hawser in Inches After Serving	Approx. Circ. in Inches After Serving	Approximate Weight per Foot in Lbs.	Breaking Strength in Tons of 2000 Pounds		
							Cast Steel	Extron Cast Steel	Plow Steel
\$2.45	\$2.70	\$2.90	$\frac{5}{8}$	$2\frac{5}{8}$	$8\frac{1}{4}$	3.80	47.9	52.5	57.5
1.80	2.00	2.15	$\frac{1}{2}$	2	$6\frac{1}{4}$	2.60	31.2	34.2	37.5
1.60	1.80	1.90	$\frac{7}{16}$	$1\frac{7}{8}$	$5\frac{7}{8}$	2.30	24.2	26.2	28.7
1.45	1.55	1.70	$\frac{3}{8}$	$1\frac{3}{4}$	$5\frac{1}{2}$	2.10	17.9	19.6	21.4

Marlin Clad Grain Shovel Rope—Extron Cast Steel**6 Strands—19 Wires to the Strand—One Hemp Core****42**

List Price per Foot	Diameter in Inches Before Serving	Approximate Diameter After Serving With Marlin	Approximate Circumference After Serving	Approximate Strength in Tons of 2000 Lbs.	Approximate Weight per Foot in Lbs.
\$0.34	$\frac{3}{8}$	$\frac{3}{4}$	$2\frac{1}{4}$	5.5	.43
.28	$\frac{1}{4}$	$\frac{5}{8}$	2	2.5	.25

Intermediate sizes of wire rope are to take the list price of the next larger size.
For proper working load, see page 65.

Tiller Rope or Hand Rope

6 Strands of 42 Wires Each—252 Wires in All—7 Hemp Cores



"Tiller" and "Hand" are terms applied to rope composed of six strands of 42 wires each, each strand being a little wire rope in itself. This rope has seven hemp cores, one large one in the center of the rope, and one little one in each of the six strands.

It is an exceedingly flexible rope, in fact the most flexible of any we make, and is capable of being bent around very small sheaves. However, it will stand very little abrasive wear on account of the fine wires of which it is composed.

Tiller or Hand Rope is used principally for signal pull purposes in mines and factories, and in connection with the operating or controlling device on passenger and freight elevators. It is also used to a limited extent for steering lines on yachts and motor boats.

Made in three grades, i. e.—Iron, Cast Steel and Plow Steel.

Diameter in Inches	Circumference in Inches	List Price per Foot			Approximate Weight per Foot in Pounds	Approximate Breaking Strength in Tons of 2000 Lbs. Each		
		43 Iron	44 Cast Steel	44A Plow Steel		Iron	Cast Steel	Plow Steel
1	3	\$0.33	\$0.43	\$0.65	1.10	8.6	16.7	20.1
$\frac{7}{8}$	$2\frac{3}{4}$	.27	.36	.55	.84	6.6	13.	15.6
$\frac{3}{4}$	$2\frac{1}{4}$	.22	.30	.45	.62	5.1	9.7	11.7
$\frac{5}{8}$	2	.17	.24	.36	.43	3.5	6.9	8.28
$\frac{9}{16}$	$1\frac{3}{4}$	.14	.20	.29	.35	3.02	5.6	6.73
$\frac{1}{2}$	$1\frac{1}{2}$	.11 $\frac{1}{2}$	.17	.26	.28	2.39	4.46	5.33
$\frac{7}{16}$	$1\frac{1}{4}$	.10	.15	.23	.21	1.91	3.44	4.13
$\frac{3}{8}$	$1\frac{1}{8}$	.09	.14	.21	.16	1.40	2.54	3.05
$\frac{5}{16}$	1	.08	.12 $\frac{1}{2}$	.18	.11	.977	1.77	2.13
$\frac{1}{4}$	$\frac{3}{4}$	.07 $\frac{1}{2}$	.11	.16	.07	.625	1.14	1.36
$\frac{3}{16}$	$\frac{9}{16}$	.07	.10	...	.042	.35	.65	....

Intermediate sizes of wire rope are to take the list price of the next larger size.

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core



Non-spinning Hoisting Rope is constructed as follows: First, 6 strands of 7 wires each, Lang's lay (wires in the strands and strands themselves twisted to the left) are laid around a hemp core; second, these strands are then covered with an outer layer composed of 12 strands, 7 wires, regular lay (wires in the strands twisted to the left and strands themselves twisted to the right).

The object of this combination of lays is to prevent a free load suspended on the end of a single line from rotating, or spinning, hence the name, "Non-spinning."

In attaching fittings, the outside strands must be secured by proper seizing. Any loosening of these strands will work to the detriment of the rope.

Made in four grades, i. e.: Cast Steel, Extron Cast Steel, Plow Steel and Monitor Silver Strand Steel.

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Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$0.46	1 1/4	4	2.70	42.5	See page 65	See page 66
.38	1 1/8	3 1/2	2.19	34.2		
.31	1	3	1.73	27.3		
.25	7/8	2 3/4	1.32	21.1		
.20 1/2	3/4	2 1/4	.97	15.6		
.15 3/4	5/8	2	.68	10.9		
.13 3/4	9/16	1 3/4	.55	8.9		
.12	1/2	1 1/2	.43	7.1		
.10 1/2	7/16	1 1/4	.33	5.5		
.09 1/2	3/8	1 1/8	.24	4.1		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core



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Extron Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.56	1 $\frac{1}{4}$	4	2.70	47.2	See page 65	See page 66
.46	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.19	38.4		
.37	1	3	1.73	30.5		
.29	$\frac{7}{8}$	2 $\frac{3}{4}$	1.32	23.5		
.24	$\frac{3}{4}$	2 $\frac{1}{4}$	.97	17.3	
.18	$\frac{5}{8}$	2	.68	12.1		
.15 $\frac{3}{4}$	$\frac{9}{16}$	1 $\frac{3}{4}$.55	9.8		
.13 $\frac{3}{4}$	$\frac{1}{2}$	1 $\frac{1}{2}$.43	7.9		
.12	$\frac{7}{16}$	1 $\frac{1}{4}$.33	6.1		
.11	$\frac{3}{8}$	1 $\frac{1}{8}$.24	4.6		

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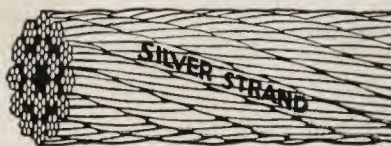
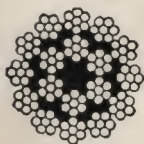
Plow Steel

\$0.65	1 $\frac{1}{4}$	4	2.70	52.3	See page 65	See page 66
.54	1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.19	42.5		
.43	1	3	1.73	33.8		
.34 $\frac{1}{2}$	$\frac{7}{8}$	2 $\frac{3}{4}$	1.32	25.9		
.28	$\frac{3}{4}$	2 $\frac{1}{4}$	.97	19.	
.21	$\frac{5}{8}$	2	.68	13.3		
.18 $\frac{1}{4}$	$\frac{9}{16}$	1 $\frac{3}{4}$	.55	10.8	
.16	$\frac{1}{2}$	1 $\frac{1}{2}$	.43	8.7	
.14	$\frac{7}{16}$	1 $\frac{1}{4}$	.33	6.7	
.13	$\frac{3}{8}$	1 $\frac{1}{8}$	.24	5.1	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core

**50****Monitor Silver Strand Steel**

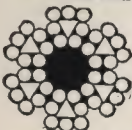
List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$1.60	1 ³ / ₄	5 ¹ / ₂	5.3	115.	<i>See page 65</i>	<i>See page 66</i>
1.30	1 ⁵ / ₈	5	4.57	100.		
1.10	1 ¹ / ₂	4 ³ / ₄	3.89	85.5		
.90	1 ³ / ₈	4 ¹ / ₄	3.27	72.5		
.75	1 ¹ / ₄	4	2.70	60.		
.62	1 ¹ / ₈	3 ¹ / ₂	2.19	49.		
.50	1	3	1.73	38.8		
.39	⁷ / ₈	2 ³ / ₄	1.32	29.8		
.31	³ / ₄	2 ¹ / ₄	.97	21.9		
.22 ¹ / ₂	⁵ / ₈	2	.68	15.3		
.19	⁹ / ₁₆	1 ³ / ₄	.55	12.5		
.17	¹ / ₂	1 ¹ / ₂	.43	10.		
.15 ¹ / ₂	⁷ / ₁₆	1 ¹ / ₄	.33	7.8		
.14 ¹ / ₂	³ / ₈	1 ¹ / ₈	.24	5.8		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Flattened Strand Haulage or Transmission Rope



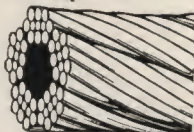
Type C—5 Strands—9 Wires to the Strand—1 Hemp Core



Type D—6 Strands—8 Wires to the Strand—1 Hemp Core



Type E—5 Strands—11 Wires to the Strand—1 Hemp Core



Types "C"—"D" and "E" Flattened Strand Rope, are laid up with coarse wires, making them especially well suited to Haulage and Transmission work. Among the Flattened Strand Ropes they occupy the same place as do the 6x7 among the ropes of Round Strand construction.

As the name implies, Flattened Strand Rope is composed of flattened strands in contradistinction to the ropes of round strand construction. By means of flattened strand a much larger per cent of the surface of the strand is put in contact with the sheave or drum, in fact the wearing surface is from 100 to 150 per cent greater than in ropes of round strand.

Type "E" takes the same list price, sheave diameter, tensile strength, etc., as type C.

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Cast Steel

Diameter in Inches	List Price per Foot	TYPE C and E			TYPE D			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Approximate Weight per Foot in Pounds	
1 1/2	\$0.75	54.	See page 65	3.49	67.	See page 65	4.05	See page 66
1 3/8	.64	46.		2.93	57.		3.40	
1 1/4	.54	39.		2.42	48.		2.81	
1 1/8	.45	31.		1.96	39.		2.28	
1	.35	24.8		1.55	31.		1.80	
7/8	.27 1/2	19.2		1.19	24.		1.39	
3/4	.20 1/2	14.3		.87	17.8		1.01	
5/8	.14	10.		.61	12.4		.70	
1/2	.10	6.5		.39	8.1		.45	
3/8	.07	3.7		.22	4.6		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.

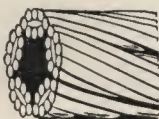
Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Haulage or Transmission Rope



**Type C—5 Strands—9 Wires
to the Strand—1 Hemp Core**



**Type D—6 Strands—8 Wires
to the Strand—1 Hemp Core**



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Extron Cast Steel

Diameter in Inches	List Price per Foot	TYPE C			TYPE D			Diameter of Drum or Sheave
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
1 1/2	\$0.93	60.	See page 65	3.49	74.	See page 65	4.05	See page 66
1 3/8	.80	50.		2.93	62.		3.40	
1 1/4	.68	42.		2.42	52.		2.81	
1 1/8	.54	35.		1.96	43.		2.28	
1	.45	27.5		1.55	34.		1.80	
7/8	.35	21.2		1.19	26.5		1.39	
3/4	.27	15.6		.87	19.5		1.01	
5/8	.18	10.8		.61	13.5		.70	
1/2	.14	7.1		.39	8.8		.45	
3/8	.11	4.0		.22	5.0		.25	

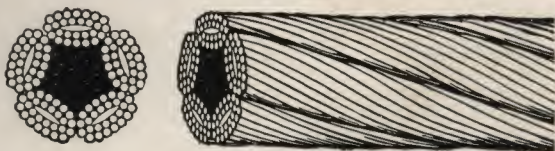
54

Monitor Silver Strand Steel

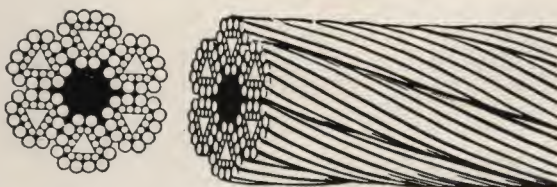
1 1/2	\$1.28	75.	See page 65	3.49	93.	See page 65	4.05	See page 66
1 3/8	1.08	63.		2.93	79.		3.40	
1 1/4	.88	52.		2.42	65.		2.81	
1 1/8	.70	43.		1.96	54.		2.28	
1	.58	34.5		1.55	43.		1.80	
7/8	.44	26.6		1.19	33.2		1.39	
3/4	.35	19.7		.87	24.6		1.01	
5/8	.25	13.8		.61	17.2		.70	
1/2	.16 1/4	8.8		.39	11.		.45	
3/8	.13 1/4	5.1		.22	6.35		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size. Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices. Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Hoisting Rope



Type A—5 Strands—28 Wires to the Strand—1 Hemp Core



Type B—6 Strands—25 Wires to the Strand—1 Hemp Core

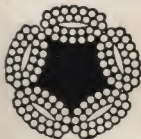
Flattened strand hoisting rope is made in two types known as Type "A," and Type "B." Both are flexible and are designed especially for hoisting purposes.

Type "A" is used in rare instances, on passenger and freight elevators, and for fast running lines on some types of coal unloading plants. On account of the large hemp core that is contained it is not adapted to general hoisting work, especially when used for heavy service over flat sheaves or drums, or where overwinding occurs.

Type "B," like the 6x19 of the Round Strand Construction, can be readily passed around sheaves of moderate size, and can stand severe strains without deforming. In fact, Type "B" is the most rigid rope we make, the small hemp core and the flattened construction of the strands combining to make it hold its shape under extreme strain.

Made in five grades, i.e.: 1. *Iron*; 2. *Cast Steel*; 3. *Extron Cast Steel*; 4. *Plow Steel*; 5. *Monitor Silver Strand Steel*.

Flattened Strand Hoisting Rope

Type A—5 Strands—28 Wires
to the Strand—1 Hemp CoreType B—6 Strands—25 Wires
to the Strand—1 Hemp Core

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Iron

Diameter in Inches	List Price per Foot	TYPE A			TYPE B			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
$\frac{3}{4}$	\$0.21	7.1	<i>See page 65</i>	.87	.....	.....	.....	.....
$\frac{5}{8}$	.15 $\frac{1}{2}$	5.		.61	.....	.....	.....	.....
$\frac{1}{2}$	.10 $\frac{1}{2}$	3.25		.39	.....	.....	.....	.....
$\frac{3}{8}$	.09 $\frac{1}{2}$	1.85		.22	.....	.....	.....	.....

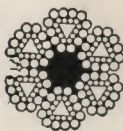
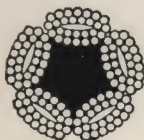
56

Cast Steel

$2\frac{3}{4}$	2.65	<i>See page 65</i>	233.	13.6	<i>See page 66</i>
$2\frac{1}{2}$	2.20	.....		.....	193.	11.2
$2\frac{1}{4}$	1.82	.....		.....	158.	9.1
2	1.44	.....		.....	125.	7.2
$1\frac{3}{4}$	1.21	.....		.....	96.	5.51
$1\frac{5}{8}$	.96	.....		.....	83.	4.75
$1\frac{1}{2}$	.86	58.		3.49	71.	4.05
$1\frac{3}{8}$	.73	49.		2.93	60.	3.40
$1\frac{1}{4}$	.59 $\frac{1}{2}$	41.		2.42	50.5	2.81
$1\frac{1}{8}$	.50	33.		1.96	40.	2.28
1	.39 $\frac{1}{2}$	26.	<i>See page 65</i>	1.55	32.	1.80	<i>See page 66</i>
$\frac{7}{8}$	.30	20.1		1.19	25.	1.39
$\frac{3}{4}$	.24	14.8		.87	18.4	1.01
$\frac{5}{8}$	.18 $\frac{1}{4}$	10.4		.61	12.9	.70
$\frac{9}{16}$	.16 $\frac{1}{2}$	8.5		.49	10.5	.57
$\frac{1}{2}$	.14 $\frac{1}{2}$	6.8		.39	8.4	.45
$\frac{3}{8}$	.12 $\frac{1}{2}$	4.		.22	4.9	.25

Intermediate sizes of wire rope are to take the list price of the next larger size. Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices. Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Flattened Strand Hoisting Rope



Type A—5 Strands—28 Wires
to the Strand—1 Hemp Core

Type B—6 Strands—25 Wires
to the Strand—1 Hemp Core

57

Extron Cast Steel

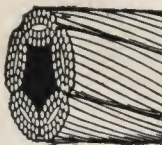
Diameter in Inches	List Price per Foot	TYPE A			TYPE B			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
2 3/4	\$3.60	See Page 65	257.	See page 65	13.6	See page 66
2 1/2	2.80	.....		.....	214.		11.2
2 1/4	2.20	.....		.....	176.		9.1
2	1.77	.....		.....	139.		7.2
1 3/4	1.55	.....		.....	107.		5.51
1 5/8	1.30	.....		.....	93.		4.75
1 1/2	1.05	64.		3.49	79.		4.05	
1 3/8	.90	54.		2.93	67.		3.40	
1 1/4	.70	45.		2.42	56.		2.81	
1 1/8	.59	37.		1.96	45.5		2.28	
1	.48	29.		1.55	36.		1.80	
7/8	.38	22.4		1.19	27.9		1.39	
3/4	.30	16.5		.87	20.5		1.01	
5/8	.22 1/2	11.6		.61	14.4		.70	
9/16	.19 1/2	9.4		.49	11.6		.57	
1/2	.17 1/2	7.5		.39	9.3		.45	
3/8	.15 1/4	4.4		.22	5.5		.25	
3/8	.17	4.8		.22	6.		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Hoisting Rope



**Type A—5 Strands—28 Wires
to the Strand—1 Hemp Core**

**Type B—6 Strands—25 Wires
to the Strand—1 Hemp Core**

58

Plow Steel

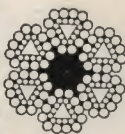
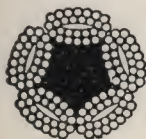
Diameter in Inches	List Price per Foot	TYPE A			TYPE B			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
2 1/4	\$2.50	See page 65	193.	9.1	See page 66
2	2.00	.....		.....	154.	.....	7.2
1 3/4	1.80	.....		.....	118.	.....	5.51
1 5/8	1.42	.....		.....	103.	.....	4.75
1 1/2	1.20	70.		3.49	88.	.....	4.05
1 3/8	1.00	60.		2.93	74.	See page 65	3.40	
1 1/4	.79	50.		2.42	62.		2.81	
1 1/8	.64 1/2	41.		1.96	50.5		2.28	
1	.53 1/2	32.		1.55	40.		1.80	
7/8	.43	24.8		1.19	30.		1.39	
3/4	.33 1/2	18.2		.87	22.6	See page 65	1.01	
5/8	.25	12.7		.61	15.8		.70	
9/16	.22	10.3		.49	12.8		.57	
1/2	.19	8.2		.39	10.3		.45	
3/8	.17	4.8		.22	6.		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Hoisting Rope



**Type A—5 Strands—28 Wires
to the Strand—1 Hemp Core**

**Type B—6 Strands—25 Wires
to the Strand—1 Hemp Core**

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Monitor Silver Strand Steel

Diameter in Inches	List Price per Foot	TYPE A			TYPE B			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
2 3/4	\$4.30	See page 65	323.	See page 65	13.6	See page 66
2 1/2	3.50	.....		.....	270.		11.2
2 1/4	2.85	.....		8.00	222.		9.1
2	2.25	.....		6.30	177.		7.2
1 3/4	2.08	.....		4.85	136.		5.51
1 5/8	1.56	.....		4.15	118.		4.75
1 1/2	1.37	81.		3.49	101.		4.05	
1 3/8	1.12	69.		2.93	86.		3.40	
1 1/4	.89	57.		2.42	71.5		2.81	
1 1/8	.71	47.		1.96	58.		2.28	
1	.60	37.		1.55	46.		1.80	
7/8	.49	28.5		1.19	35.4		1.39	
3/4	.37 1/2	20.9		.87	26.		1.01	
5/8	.28	14.6		.61	18.2		.70	
9/16	.25	11.9		.49	14.8		.57	
1/2	.20 3/4	9.5		.39	11.8		.45	
3/8	.18 1/4	5.6		.22	6.9		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 10% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Aerial Tramways

Trenton-Bleichert System



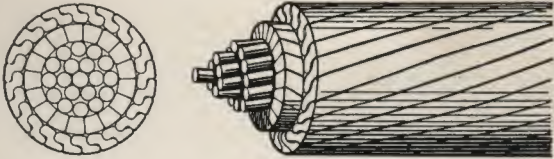
Aerial tramways have long been recognized as an economical and efficient method of transportation; their application, in the early days, was principally in mining operations where very often the aerial tramway was the only available method for connecting the mine with the Smelter or the nearest railroad, the contour of the ground being so rugged as to make the use of a surface railroad impossible.

Later, through radical improvements in methods and materials of manufacture of tramway cables and machinery and through a thorough understanding of the engineering principles of tramway design, the field of application of Aerial Tramways was greatly enlarged, so that now we have many of our installations carrying coal, mine waste, logs, sawed lumber, pulp wood, sand and gravel, explosives, salt, cement, sugar, stone, and other materials too numerous to mention. Recently tramways of large capacity and considerable length were built for the construction of large dams.

These tramways vary in length from a few hundred feet to thirteen miles and in capacity from a few tons to 250 tons per hour and larger.

Illustrations of the track ropes, next two pages. Special tramway catalogue and other literature furnished on application.

Locked Coil Track Cable



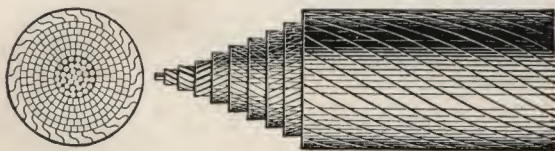
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Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Lbs.	Approximate Breaking Stress in Tons of 2,000 lbs.
\$2.30	2	6 $\frac{1}{4}$	10.	158
2.05	1 $\frac{7}{8}$	5 $\frac{3}{4}$	8.79	138
1.78	1 $\frac{3}{4}$	5 $\frac{1}{2}$	7.66	125
1.54	1 $\frac{5}{8}$	5 $\frac{1}{8}$	6.60	108
1.32	1 $\frac{1}{2}$	4 $\frac{3}{4}$	5.63	93
1.12	1 $\frac{3}{8}$	4 $\frac{1}{4}$	4.73	78
.95	1 $\frac{1}{4}$	4	3.91	65
.79	1 $\frac{1}{8}$	3 $\frac{1}{2}$	3.16	54
.64	1	3	2.5	42
.49	$\frac{7}{8}$	2 $\frac{3}{4}$	1.92	32

Locked Coil Track Cable, illustrated above, is a modification of the Locked Wire Cable shown on page 53, and differs from it simply in the fewer number of wires composing it. These wires, consequently, are of larger diameter. Hence the Locked Coil Track Cable is the stiffer of the two, but it possesses sufficient flexibility to allow it to be shipped in coils from 5 feet to 6 feet in diameter. Locked Coil Track Cable is used expressly as a stationary overhead cable for aerial tramways. For such purposes it is superior in durability to any other construction and is used in the Trenton-Bleichert Aerial Tramways, manufactured by us. If a cheaper track cable than the Locked Coil type is desired, the Smooth Coil Track Strand, shown on page 54 may be used, but it is not as durable and its external surface is not as smooth for the carriage wheels that run upon it.

Locked Wire Cable



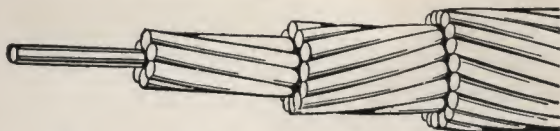
Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in lbs.	Approximate Breaking Strength in Tons of 2,000 lbs.
\$3.00	2 1/4	7 1/8	12.65	195
2.30	2	6 1/4	10.00	158
2.05	1 7/8	5 7/8	8.79	138
1.78	1 3/4	5 1/2	7.66	125
1.54	1 5/8	5 1/8	6.60	108
1.32	1 1/2	4 3/4	5.63	93
1.12	1 3/8	4 1/4	4.73	78
.95	1 1/4	4	3.91	65
.79	1 1/8	3 1/2	3.16	54
.64	1	3	2.50	42
.49	7/8	2 3/4	1.92	32
.36	3/4	2 1/4	1.41	22
.23 1/2	5/8	2	.98	16
.21	9/16	1 3/4	.79	13
.18 1/2	1/2	1 1/2	.63	10

This cable may be used for fixed track lines on overhead cableways having fixed spans, and because of its very smooth external surface will not wear out the carriage wheels which run upon it. For such use it has no equal. This cable is suitable only for fixed spans, but cannot be used for running purposes. Customers should give full information as to the use to which it is to be put and character of the work.

See our Aerial Tramways catalogue.

Smooth Coil Track Strand for Aerial Tramways

1
Wire7
Wires19
Wires37
Wires

Dia. in Inches	No. of Wires in Strand	Weight per 100 Feet in lbs.	60 CAST STEEL		61 PLOW STEEL	
			List Prices per 100 Feet	Breaking Strength in Tons of 2,000 lbs.	List Prices per 100 Feet	Breaking Strength in Tons of 2,000 lbs.
2½	91	1,272	\$318.00	285.00	\$350.00	335.00
2¼	91	1,019	253.00	233.00	278.00	266.00
2⅛	91	928	233.00	204.00	256.00	240.00
2	61	813	189.00	185.00	208.00	218.00
1⅞	61	711	166.00	161.00	182.00	189.00
1¾	61	621	140.00	145.80	154.00	171.00
1⅝	61	536	117.50	124.00	129.00	146.00
1½	37	455	95.30	108.40	104.50	127.50
1⅜	37	379	69.40	88.80	79.00	105.00
1¼	37	310	55.00	71.80	63.90	84.60
1⅓	37	258	46.25	60.00	50.80	70.70
1	19	198	38.20	49.20	44.00	58.00
⅞	19	155	29.90	37.60	34.30	44.40
¾	19	112	19.35	27.60	21.30	32.50
⅝	19	79	12.80	19.20	13.80	22.30
⅙	19	63	10.40	15.00	11.45	18.00
½	19	49	8.20	12.60	9.05	15.30

Discounts upon application.

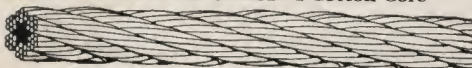
NOTE—Above are standard constructions. For list price on other constructions add 10% to above lists for each additional layer of wires, i. e., the standard construction for 1⅝" is 37 wires, for list price on 1⅝"-61 wires, add 10% to list for 1⅝"-37 wires, for 1⅝"-91 wires, add 21% to list price of 1⅝"-37 wires. Breaking strengths and weights will be about the same.

The importance of the wire rope tramway for transporting all kinds of material makes it expedient to insert the foregoing table of two different grades of track strand. This strand is designed to give as much flexibility as possible as well as a fairly smooth surface for traveler wheels to run upon. The plow steel quality affords the greatest strength with the least weight, a very important advantage, especially in long spans.

See our Aerial Tramways catalogue.

Sash Cord

6 Strands—7 Wires to the Strand—1 Cotton Core



Sash Cord is a term applied to wire cord composed of six strands of seven wires each, with one cotton core.

Unless otherwise specified sash cord is made "dead soft."

Used principally for window weights, bell cords, automobile brakes, whistles and shades.

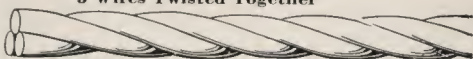
$\frac{3}{8}$ inch diameter Galvanized Sash Cord is used on summer car curtain fixtures.

$\frac{1}{16}$ inch Galvanized Sash Cord is used on steam car curtain fixtures and in roll top desks.

Trade Number	List Price per Foot			Diameter in Inches	Weight per Foot in Pounds		Breaking Strength in Pounds		
	64	65	66						
	Iron (Annealed or Bright)	Tinned or Galvanized Iron	Copper		Iron	Copper	Bright Iron	Annealed Iron	Bright Copper
26	\$0.03	\$0.04	\$0.09	$\frac{1}{4}$	.094	.108	2040	1225	1225
27	.02 $\frac{3}{4}$	.03 $\frac{1}{2}$	.07 $\frac{1}{2}$	$\frac{7}{32}$	.072	.083	1570	940	940
27 $\frac{1}{2}$	.02 $\frac{1}{4}$	.03	.06	$\frac{3}{16}$	.053	.061	1150	688	688
27 $\frac{3}{4}$	.02	.02 $\frac{3}{4}$	.05 $\frac{1}{4}$	$\frac{5}{32}$	.038	.044	840	478	478
28	.01 $\frac{3}{4}$	.02 $\frac{1}{4}$	.04 $\frac{1}{2}$	$\frac{1}{8}$	.023	.026	560	306	306
28 $\frac{1}{2}$	.01 $\frac{1}{2}$	.02	.03 $\frac{1}{2}$	$\frac{3}{32}$	.013	.015	315	172	172
29	.01 $\frac{1}{4}$.01 $\frac{3}{4}$.03	$\frac{1}{16}$.006	.007	140	77	77

Stone Sawing Strand

3 Wires Twisted Together



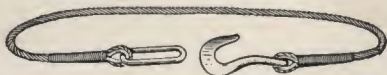
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A. S. & W. Co.'s Steel Wire Gauge

List Price per 1000 Feet	Approximate Diameter in Inches	Approximate Gauge of Wire	Approximate Weight per 1000 Feet Pounds
\$24.00	.283	11	127
19.00	.250	12	99
18.00	.217	13	75
16.50	.189	14	56
15.75	.172	14 $\frac{3}{4}$	48
14.00	.157	15 $\frac{1}{2}$	40
12.00	.141	16	33
10.50	.125	17	26

This is suitable for sawing blocks of sandstone or similar soft stone, but should not be used for marble or granite.

Locomotive Switching and Ballast Unloader Rope



Single Locomotive Switching Rope

Hook and thimble in one end; thimble and link in other end.



Double Locomotive Switching Rope

Hook, thimble and link in one end; thimble and two links in other end.

Wrecking Rope

Same construction as Switching Rope in single and double pattern, except made of high strength rope (usually Monitor "A" or "AA"), with proportionate increase in size and strength of hooks and links.

To determine the net selling price of Locomotive Switching, Ballast Unloader and Wrecking Ropes, add to the net price of the length, size and quality of rope specified extras furnished upon request. The net price of the rope is determined by using list and discount applying to the grade, quality and construction to which the fittings are to be attached, the length being measured from the bearing of hook in one end to the bearing of the last link in the other end. Extras include fittings and labor of splicing.

Prices on application.

Galvanized Rope

General Information

Galvanized Rope, like Bright Rope, is made in many grades and constructions to meet the varying conditions of service. It is used where exposure to the weather, constant or periodical moisture, etc., are among the conditions that tend to corrode a rope not protected in this way.

One should bear in mind, however, that Galvanized Rope is not adapted to general outdoor hoisting work, as the zinc on the wires will not stand such service. Being a comparatively brittle metal, it flakes off under the bending, leaving the bare wire exposed to the corroding effects of the elements. Where much bending is met, a Bright Rope will last longer than a Galvanized, especially when the Bright Rope is covered with grease. Practically all of our Bright Rope is furnished with a coating of grease, and we can supply it with a heavy "Shield Filler," which is a coating composed of a combination of oil and tar, the tar acting as an additional protection against the elements.

Galvanized Rope is especially adapted to "standing" service, wherein no bending is encountered, such as guys for derricks and smokestacks; also for ships' rigging, towing, mooring lines, etc.

The succeeding pages show the list prices, grades and constructions of Galvanized Rope found in everyday use.

There are a few special constructions of Galvanized Rope that are not shown. List prices can be found for these by adding 25 per cent to the list price of the corresponding size, grade and construction of Bright (ungalvanized) Rope covered in the fore part of this catalogue.

Discount on Regular and Special constructions of Galvanized Rope furnished upon application.

Galvanized Standing Rope*



72

6 Strands—7 Wires to the Strand—1 Hemp Core
Iron

List Price per Foot	Diameter in Inches	Circum- ference in Inches	Approx- imate Weight per Foot	Breaking Strength in Tons of 2000 Lbs.	Circum- ference of Equal Manila Rope
\$0.55	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.60	37.	11
.51	1 $\frac{11}{16}$	5 $\frac{1}{4}$	4.27	34.7	10 $\frac{1}{2}$
.48	1 $\frac{5}{8}$	5	3.96	32.4	10
.44	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.38	27.7	9 $\frac{1}{2}$
.39	1 $\frac{7}{16}$	4 $\frac{1}{2}$	3.10	25.6	9
.35	1 $\frac{3}{8}$	4 $\frac{1}{4}$	2.84	23.7	8 $\frac{1}{2}$
.31	1 $\frac{1}{4}$	4	2.34	19.9	8
.28	1 $\frac{3}{16}$	3 $\frac{3}{4}$	2.12	18.1	7 $\frac{1}{2}$
.24 $\frac{1}{2}$	1 $\frac{1}{8}$	3 $\frac{1}{2}$	1.90	16.5	6 $\frac{1}{2}$
.22	1 $\frac{1}{16}$	3 $\frac{1}{4}$	1.70	14.8	6
.18 $\frac{3}{4}$	1	3	1.50	13.2	5 $\frac{3}{4}$
.16 $\frac{1}{4}$	$\frac{7}{8}$	2 $\frac{3}{4}$	1.15	10.2	5 $\frac{1}{4}$
.13 $\frac{3}{4}$	1 $\frac{3}{16}$	2 $\frac{1}{2}$	.99	8.86	5
.11 $\frac{1}{4}$	$\frac{3}{4}$	2 $\frac{1}{4}$	.84	7.10	4 $\frac{3}{4}$
.09	$\frac{5}{8}$	2	.59	5.30	4 $\frac{1}{2}$
.08	$\frac{9}{16}$	1 $\frac{3}{4}$	.48	4.32	3 $\frac{3}{4}$
.06 $\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	.38	3.43	3
.05 $\frac{1}{4}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.29	2.64	2 $\frac{1}{2}$
.04 $\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.21	1.95	2 $\frac{1}{4}$
.03 $\frac{1}{2}$	$\frac{5}{16}$	1	.15	1.36	2
5 Strands					
.03	$\frac{9}{32}$	$\frac{7}{8}$	.125	1.20	1 $\frac{3}{4}$
.02 $\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	.09	.99	1 $\frac{1}{2}$
.02 $\frac{1}{4}$	$\frac{7}{32}$	$\frac{5}{8}$	.063	.79	1 $\frac{1}{4}$
.02	$\frac{3}{16}$	$\frac{1}{2}$	.04	.61	1 $\frac{1}{8}$

*Otherwise known as "Guy Rope" or "Yacht Rigging Rope."

Intermediate sizes of wire rope are to take the list price of the next larger size.
Sizes $\frac{1}{8}$ inch and smaller, 5 strands of 7 wires to the strand.Ropes made with wire strand center add 10% to list prices. This will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Galvanized Standing and Guy Rope*

6 Strands—7 or 19 Wires to the Strand—1 Hemp Core



6x7



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Cast Steel

List Price per Foot		Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds	Circumference of Equal Manila Rope
19 Wires	7 Wires					
\$0.50	\$0.47	1 1/4	4	2.50	40.	13
.46	.44	1 3/16	3 3/4	2.26	36.4	12
.41 3/4	.39 1/2	1 1/8	3 1/2	2.03	32.8	11
.38	.35	1 1/16	3 1/4	1.81	29.4	10
.34	.31 3/4	1	3	1.60	26.1	9
.26 1/4	.24 3/4	7/8	2 3/4	1.23	20.	8 1/2
.23 1/2	.22	13/16	2 1/2	1.06	17.3	8
.20 3/4	.18 1/2	3/4	2 1/4	.90	14.8	7
.15 1/4	.13	5/8	2	.63	10.4	6
.13	.11	9/16	1 3/4	.51	8.5	5 1/4
.12	.08 3/4	1/2	1 1/2	.40	6.8	4 3/4
.11 1/2	.08	15/32	1 3/8	.35	6.	4 1/2
.11	.07	7/16	1 1/4	.31	5.3	4 1/4
.10 1/4	.06	3/8	1 1/8	.23	3.9	3 3/8
.10	.04 3/4	5/16	1	.16	2.8	3

*Otherwise known as "Yacht Rigging Rope."

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When made with Wire Strand Center add 10% to list price per foot. This will increase the breaking strength by about 7 1/2%.

Perfected Highway Guard Rail Strand

3 Strands—7 Wires in Each Strand

Perfected extra galvanized.



Made according to the requirements of the state highway departments. Galvanized by our new perfected process so that each wire is properly protected with zinc.

Also made in other constructions such as 7x7. Price on application. Can also be furnished in single galvanized.

Galvanized Deep Sea Towing Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



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Special Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circum- ference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds
\$1.60	$2\frac{3}{8}$	$7\frac{1}{2}$	8.74	173.3
1.52	$2\frac{5}{16}$	$7\frac{1}{4}$	8.29	164.6
1.44	$2\frac{1}{4}$	$7\frac{1}{8}$	7.85	156.2
1.35	$2\frac{1}{8}$	$6\frac{3}{4}$	7.	140.2
1.28	$2\frac{1}{16}$	$6\frac{1}{2}$	6.59	132.6
1.20	2	$6\frac{1}{4}$	6.20	125.
1.12	$1\frac{15}{16}$	6	5.82	117.8
1.05	$1\frac{13}{16}$	$5\frac{3}{4}$	5.09	103.4
.98	$1\frac{3}{4}$	$5\frac{1}{2}$	4.75	96.5
.91	$1\frac{11}{16}$	$5\frac{1}{4}$	4.41	89.8
.84	$1\frac{5}{8}$	5	4.09	83.4
.77	$1\frac{1}{2}$	$4\frac{3}{4}$	3.49	71.2
.71	$1\frac{7}{16}$	$4\frac{1}{2}$	3.20	65.5
.65	$1\frac{3}{8}$	$4\frac{1}{4}$	2.93	60.
.60	$1\frac{1}{4}$	4	2.42	49.7
.54	$1\frac{3}{16}$	$3\frac{3}{4}$	2.19	44.9
.48	$1\frac{1}{8}$	$3\frac{1}{2}$	1.96	40.3
.42	$1\frac{1}{16}$	$3\frac{1}{4}$	1.75	36.
.37	1	3	1.55	31.9
.31	$\frac{7}{8}$	$2\frac{3}{4}$	1.19	24.6
.26	$\frac{13}{16}$	$2\frac{1}{2}$	1.02	21.3
.23	$\frac{3}{4}$	$2\frac{1}{4}$	.87	18.3

Intermediate sizes of wire rope are to take the list price of the next larger size.

Galvanized Running Rope*

6 Strands—12 Wires to the Strand—7 Hemp Cores



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List Price per Foot			Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds		
Iron	Cast Steel	Plow Steel				Iron	Cast Steel	Plow Steel
.....	\$0.78	.....	2 $\frac{1}{16}$	6 $\frac{1}{2}$	4.47	.....	66.6	81.3
.....	.72	.....	2	6 $\frac{1}{4}$	4.20	.....	62.7	76.9
.....	.67	.....	1 $\frac{15}{16}$	6	3.94	.....	59.	72.2
.....	.62	.....	1 $\frac{13}{16}$	5 $\frac{3}{4}$	3.45	.....	51.7	63.4
.....	.57	.....	1 $\frac{3}{4}$	5 $\frac{1}{2}$	3.22	.....	48.3	59.3
.....	.53	.....	1 $\frac{11}{16}$	5 $\frac{1}{4}$	2.99	.....	45.	55.3
.....	.49	\$0.79	1 $\frac{5}{8}$	5	2.77	.....	41.8	51.5
.....	.44	.71	1 $\frac{1}{2}$	4 $\frac{3}{4}$	2.36	.....	35.8	44.3
.....	.41	.65	1 $\frac{7}{16}$	4 $\frac{1}{2}$	2.17	.....	33.	40.7
.....	.38	.60	1 $\frac{3}{8}$	4 $\frac{1}{4}$	1.99	.....	30.2	37.4
.....	.35	.55	1 $\frac{1}{4}$	4	1.64	.....	25.1	31.
.....	.33	.49 $\frac{1}{2}$	1 $\frac{3}{16}$	3 $\frac{3}{4}$	1.48	.....	22.8	28.1
.....	.31	.44	1 $\frac{1}{8}$	3 $\frac{1}{2}$	1.33	.....	20.5	25.3
\$0.22	.30	.40	1 $\frac{1}{16}$	3 $\frac{1}{4}$	1.19	9.	18.3	22.6
.20	.27	.36	1	3	1.05	8.1	16.3	20.
.17	.23	.31	$\frac{7}{8}$	2 $\frac{3}{4}$	.80	6.3	12.5	15.4
.14 $\frac{1}{2}$	.20	.27	1 $\frac{3}{16}$	2 $\frac{1}{2}$	.69	5.46	10.8	13.3
.12	.16 $\frac{1}{2}$	.22	$\frac{3}{4}$	2 $\frac{1}{4}$	.59	4.7	9.26	11.3
.10	.14	.19	$\frac{5}{8}$	2	.41	3.35	6.46	7.9
.08	.11	.15	$\frac{9}{16}$	1 $\frac{3}{4}$	.33	2.75	5.26	6.43
.07	.09	.12	$\frac{1}{2}$	1 $\frac{1}{2}$	.26	2.18	4.23	5.1
.06 $\frac{1}{2}$	.08 $\frac{1}{2}$	.11 $\frac{1}{4}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.20	1.69	3.29	4.01
.06	.07 $\frac{3}{4}$	.10 $\frac{1}{4}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.15	1.26	2.47	3.01
.05 $\frac{1}{2}$	.07	.09 $\frac{1}{2}$	$\frac{5}{16}$	1	.10	.88	1.76	2.13

*Sometimes called Hawser and Mooring Line.

Intermediate sizes of wire rope are to take the list price of the next larger size.

Galvanized Steel Hawser

6 Strands—24 Wires to the Strand—7 Hemp Cores



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Cast Steel and Plow Steel

List Price per Foot		Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds	
Cast Steel	Plow Steel				Cast Steel	Plow Steel
\$1.22	\$1.52	2 $\frac{1}{16}$	6 $\frac{1}{2}$	5.87	98.	118.
1.14	1.42	2	6 $\frac{1}{4}$	5.52	92.	112.
1.06	1.32	1 $\frac{15}{16}$	6	5.18	86.6	105.
1.00	1.25	1 $\frac{13}{16}$	5 $\frac{3}{4}$	4.53	76.2	92.3
.93	1.16	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.23	71.2	86.2
.86	1.07	1 $\frac{11}{16}$	5 $\frac{1}{4}$	3.93	66.3	80.2
.80	1.00	1 $\frac{5}{8}$	5	3.64	61.6	74.5
.73	.91	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.11	52.6	63.6
.67	.84	1 $\frac{7}{16}$	4 $\frac{1}{2}$	2.85	48.4	58.5
.62	.77	1 $\frac{3}{8}$	4 $\frac{1}{4}$	2.61	44.4	53.6
.57	.71	1 $\frac{1}{4}$	4	2.16	36.7	44.4
.51	.64	1 $\frac{3}{16}$	3 $\frac{3}{4}$	1.95	33.2	40.1
.45	.56	1 $\frac{1}{8}$	3 $\frac{1}{2}$	1.75	29.9	36.
.40	.50	1 $\frac{1}{16}$	3 $\frac{1}{4}$	1.56	26.7	32.2
.35	.44	1	3	1.38	23.7	28.5
.29	.36	$\frac{7}{8}$	2 $\frac{3}{4}$	1.06	18.3	22.
.25	.31	1 $\frac{13}{16}$	2 $\frac{1}{2}$	.91	15.8	19.1
.22	.27	$\frac{3}{4}$	2 $\frac{1}{4}$	.78	13.6	16.4
.20	.25	$\frac{5}{8}$	2	.54	9.59	11.6
.18	.22	1 $\frac{1}{2}$	1 $\frac{1}{2}$	.35	6.37	7.63
.16	.20	$\frac{3}{8}$	1 $\frac{1}{8}$	.194	3.67	4.4

*Sometimes called "Mooring Lines."

Intermediate sizes of wire rope are to take the list price of the next larger size.

List Prices

Galvanized Steel Bridge Rope

7 Strands—7, 19 or 37 Wires to the Strand



7x19



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Plow Steel

Price per 100 Feet	Diameter in Inches	Approximate Circum- ference in Inches	Weight per Foot in Pounds	Approximate Breaking Strength in Tons of 2000 Pounds
<i>Prices upon application</i>	7 Strands—37 Wires Each Strand			
	3	9½	15.3	360
	2¾	8⅝	12.9	310
	7 Strands—19 Wires Each Strand			
	2⅝	8¼	12.1	283
	2½	7⅞	11.	256
	2⅜	7½	9.90	232
	2¼	7⅛	8.91	208
	2⅛	6¾	7.92	185
	2	6¼	7.04	164
	1⅞	5¾	6.19	144
	1¾	5½	5.39	124
	7 Strands—7 Wires Each Strand			
	1⅝	5	4.36	106
	1½	4¾	3.72	90
	1⅜	4¼	3.12	75
	1¼	4	2.57	62
	1⅛	3½	2.09	54
	1	3	1.65	42

Intermediate sizes of wire rope are to take the list price of the next larger size.

We do not build nor erect suspension bridges, but are prepared to supply cables fitted with special bridge sockets ready for attaching to anchorage bolts. Prices upon application.

Galvanized Mast Arm or Arc Light Rope

8 or 9 Strands—4 or 7 Wires to the Strand—1 Cotton Core



9x7



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List Price per Foot	Diameter in Inches	Weight per Foot in Pounds	Breaking Strength in Pounds	Construction
\$0.07	$\frac{1}{2}$	.335	4700	9x7
.06	$\frac{7}{16}$	.245	3400	9x7
.05	$\frac{3}{8}$	.163	2300	*9x7
.03 $\frac{1}{2}$	$\frac{5}{16}$	.107	1530	9x4
.02 $\frac{3}{4}$	$\frac{1}{4}$	.077	1100	*8x4

Used for Arc Lights, Mast Arms, or other purposes where operated over small sheaves and exposed to moisture. It is more durable than manila rope and does not shrink when exposed to moisture.

The constructions shown are standard.

*For these sizes 9x4 can be furnished if desired and at same prices.

Proper Working Loads for Wire Rope

It is never advisable for the working load of a Wire Rope for general purposes, particularly running ropes, to exceed one-fifth of the breaking strength. This means that the factor of safety should be not less than five. To determine proper working load, divide the breaking strength by the proper factor of safety; e.g., a $\frac{7}{8}$ " diameter 6x19 Plow Steel Rope has a breaking strength of 28 tons and with a factor of safety of five the proper working load would be not over 5.6 tons.

Factors of safety in excess of five, varying up to eight and even more, are often required for safe and economical operation. The proper factor of safety for a wire rope should be determined by careful and thorough consideration of all pertinent data. Such data should include all loads, acceleration, deceleration, rope speed, rope attachments, the number, size and arrangement of all sheaves and drums, existing conditions causing corrosion and abrasion, length of rope in service, economical rope life and the degree of danger to life and property.

No fixed arbitrary values for factor of safety can be properly set for various classifications of service. These can safely vary, within limits, with the conditions present on individual installations and should any doubt arise, we suggest that you consult with us.

Proper Sizes of Sheaves and Drums for Wire Rope

Sheaves and Drums should be carefully examined for proper size, free running and proper groove diameters for most economical wire rope service. It is advisable to design the sheave and drum equipment so that the tread diameters are approximately as follows:

AVERAGE DIAMETERS RECOMMENDED

For 6 x 7 Rope, 72 times rope diameter

"	6 x 19	"	45	"	"	"
"	6 x 37	"	27	"	"	"
"	8 x 19	"	31	"	"	"

Various service conditions allow, and often require for economical service, changes from these diameters; for example, on larger hoisting installations, sheaves for use with 6x7 rope are sometimes set at 96 times the rope diameter and, for 6x19 rope, are sometimes set as high as 90 times rope diameter.

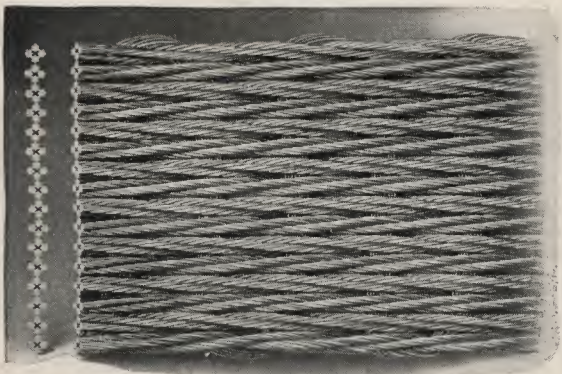
It is also true that for certain classes of service, ratios smaller than these are possible and economical, but it is advisable to never allow the sheave and drum diameters to be set below the following:

MINIMUM DIAMETERS

For 6 x 7 Rope, 42 times rope diameter

"	6 x 19	"	30	"	"	"
"	6 x 37	"	18	"	"	"
"	8 x 19	"	21	"	"	"

It should be thoroughly appreciated that diameters larger than those listed as minimum will give increased rope life and, consequently, more economical service. Should there be a question as to their size or the material composing sheaves and drums for a particular installation, we would suggest that you consult with us.



Flat Rope

Flat Rope is composed of a number of wire ropes called "flat rope strands," of alternate right and left lay, placed side by side, then secured or sewed together with soft Swedish iron or steel wire, thus forming a complete rope as shown in the cut, usually of cast steel, although it can be made of iron or plow steel, if necessary. The sewing or filling wires, being so much softer than the steel wires composing the strands of the rope, act as a cushion or soft bed for the strands, and wear out much faster than the harder wires composing the latter. When the sewing wires are worn out, the flat rope can be reseeded with new wire, and if any of the rope strands are also worn or damaged, these can be replaced by new portions. In fact, flat ropes admit of being repaired by the replacing of any worn or injured part. Strands of any kind, size or quality can be furnished. A large stock of Swedish iron sewing wire is carried in warehouse, which can be furnished to repair or sew flat rope at the mine.

Flat Rope is used principally for hoisting purposes. When large and long rope is used in hoisting heavy loads out of deep shafts, round rope requires large and heavy drums on which to wind, while flat rope, winding on itself, needs a reel but a little wider than the width of the rope. When space for machinery is an object, the advantage of using the style of rope requiring the smallest reel is obvious. Furthermore, ~~flat rope~~ does not spin or twist in the shaft. Flat rope can be furnished from $1\frac{3}{4}$ inches to 8 inches in width, and from $\frac{1}{4}$ inch to $\frac{7}{8}$ inch in thickness, the length varying from 20 to 3,000 feet.

Flat Rope

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Width and Thickness in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds		Approximate Working Load in Tons of 2000 Lbs.
		Cast Steel	Plow Steel	
$\frac{7}{8}$ x 8	10.69	224.3	275.3	See page 65
$\frac{7}{8}$ x 7	9.63	201.9	247.8	
$\frac{7}{8}$ x 6	8.56	179.4	220.2	
$\frac{7}{8}$ x 5	7.50	157.	192.7	
$\frac{3}{4}$ x 8	9.70	184.5	228.3	
$\frac{3}{4}$ x 7	8.13	167.7	207.5	
$\frac{3}{4}$ x 6	7.31	150.9	186.8	
$\frac{3}{4}$ x 5	6.50	134.2	166.	
$\frac{5}{8}$ x 8	8.32	174.6	216.	
$\frac{5}{8}$ x 7	7.23	151.3	187.	
$\frac{5}{8}$ x 6	6.14	128.1	158.	
$\frac{5}{8}$ x $5\frac{1}{2}$	5.59	116.4	143.8	
$\frac{5}{8}$ x 5	5.04	104.8	129.4	
$\frac{5}{8}$ x $4\frac{1}{2}$	4.50	93.1	115.	
$\frac{5}{8}$ x 4	3.95	81.5	100.6	
$\frac{5}{8}$ x $3\frac{1}{2}$	3.40	69.9	86.3	
$\frac{1}{2}$ x 7	5.85	122.	150.4	
$\frac{1}{2}$ x 6	4.85	106.7	131.6	
$\frac{1}{2}$ x $5\frac{1}{2}$	4.50	99.1	122.2	
$\frac{1}{2}$ x 5	4.16	91.5	112.8	
$\frac{1}{2}$ x $4\frac{1}{2}$	3.82	76.2	94.	
$\frac{1}{2}$ x 4	3.16	68.6	84.6	
$\frac{1}{2}$ x $3\frac{1}{2}$	2.82	61.	75.2	
$\frac{1}{2}$ x 3	2.47	53.4	65.8	
$\frac{1}{2}$ x $2\frac{1}{2}$	2.13	45.8	56.4	
$\frac{3}{8}$ x 6	3.63	76.5	93.7	
$\frac{3}{8}$ x $5\frac{1}{2}$	3.42	72.2	88.5	
$\frac{3}{8}$ x 5	3.03	63.8	78.1	
$\frac{3}{8}$ x $4\frac{1}{2}$	2.83	59.5	72.8	
$\frac{3}{8}$ x 4	2.44	51.	62.4	
$\frac{3}{8}$ x $3\frac{1}{2}$	2.23	46.7	57.2	
$\frac{3}{8}$ x 3	1.84	38.3	46.8	
$\frac{3}{8}$ x $2\frac{1}{2}$	1.64	34.	41.6	
$\frac{3}{8}$ x 2	1.25	25.5	31.2	
$\frac{5}{16}$ x 4	2.29	48.	58.5	

Refer to office for prices.

(Continued on next page)

83 (Continued)

Flat Rope

Width and Thickness in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds		Approximate Working Load in Tons of 2000 Lbs.
		Cast Steel	Plow Steel	
$\frac{5}{16} \times 3\frac{1}{2}$	2.03	42.	51.2	See page 65
$\frac{5}{16} \times 3$	1.75	36.	43.8	
$\frac{5}{16} \times 2\frac{1}{2}$	1.47	30.	36.5	
$\frac{5}{16} \times 2$	1.17	24.	29.2	
$\frac{1}{4} \times 3$	1.34	26.	31.3	
$\frac{1}{4} \times 2\frac{1}{2}$	1.15	22.	26.5	
$\frac{1}{4} \times 2$	.88	18.	21.7
$\frac{1}{4} \times 1\frac{1}{2}$	.69	14.	16.9

Refer to office for prices.

A. S. & W. Shield Filler

This Shield Filler has been compounded to meet the demand for a first class lubricant of moderate cost, which should be suitable for as many wire rope conditions as possible. It is particularly recommended for mine hoists and haulage systems, coal dock haulage roads, dredge ropes, logging ropes, steam shovel ropes, oil well drilling ropes, quarry ropes, and, in fact, any rope where a heavy lubricant is desirable.

A. S. & W. Shield Filler adheres very tenaciously to a wire rope and may be applied without any difficulty to a rope that has already had a coating of grease. It has a high drip point and is a flexible compound at low temperatures. Tests on mine ropes subjected to bad acid mine water have proven conclusively that it will protect such ropes as completely as possible from the corrosive action of such water, and thus prolong the rope service. It does not dry up quickly and flake off, like many compounds, but retains to a marked degree the elasticity necessary for a rope lubricant.

Application of this lubricant is readily made by passing a rope slowly through a small tank which is filled with hot compound and arranging a wiper to take off any excess of compound. In order to heat the compound for application, a steam coil may be used, or for small amounts, the cans may be heated by putting into hot water until contents are warmed clear through. If heat is not available, the Shield Filler can be applied without warming, but it will flow better when hot.

A. S. & W. Co. Cam Cutters for Wire Rope



Cuts all grades and sizes of wire hoisting ropes, haulage ropes, running ropes, oil well ropes, etc., up to 1 inch and $1\frac{1}{4}$ inch, inclusive. No adjustment necessary for different sizes of rope.

The frame is made of cast steel; the handle of machine steel; the cutters of tool steel, tempered.

1'	Cutter.....	{Price on Application
$1\frac{1}{4}$ '	".....	

Standard Steel Strand Galvanized and Perfected Extra Galvanized Strand



7 or 19 Steel Wires Twisted into a Single Strand

This is a strand of moderate strength. It is used chiefly for guying poles and smoke stacks or supporting trolley wires, and for operating railroad signals.

Made in galvanized and extra galvanized, the latter being protected by a heavier coating of spelter to meet the requirements of customers desiring the additional protection and wearing value.

LIST PRICES

84 7 Steel Wires Twisted into a Single Strand— Galv. or Extra Galv.

List Price per 100 Feet	Diameter Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet in Lbs.	Approximate Strength in Pounds
\$14.00	$\frac{3}{4}$	.250	1,200	16,700
8.50	$\frac{5}{8}$	.207	813	11,600
7.00	$\frac{9}{16}$	.188	671	9,600
5.50	$\frac{1}{2}$	.165	517	7,400
4.50	$\frac{7}{16}$	.145	399	5,700
3.50	$\frac{3}{8}$	.125	296	4,250
2.50	$\frac{5}{16}$	.104	205	3,200
2.25	$\frac{9}{32}$	.093	164	2,570
1.75	$\frac{1}{4}$	.080	121	1,900
1.50	$\frac{7}{32}$	.072	98.3	1,540
1.25	$\frac{3}{16}$	.062	72.9	1,150
1.15	$\frac{5}{32}$	.052	51.3	870
1.10	$\frac{9}{64}$	.047	40	700
1.00	$\frac{1}{8}$	.041	31.8	540
.90	$\frac{7}{64}$	.035	25	450
.80	$\frac{3}{32}$	.031	20	400
.70	$\frac{5}{64}$	.026	13	300

85 19 Wires Twisted into a Single Strand— Galv. or Perfected Extra Galv.

\$26.00	1	.200	2,073	28,700
20.70	$\frac{7}{8}$	.175	1,581	21,900
16.80	$\frac{3}{4}$	.150	1,155	16,000
11.00	$\frac{5}{8}$	.125	796	11,000
9.25	$\frac{9}{16}$	.110	637	9,640
7.30	$\frac{1}{2}$	.100	504	7,620

Intermediate sizes take price of next higher size on the list.

Perfected Extra Galvanized Special Steel Strand

Extra Galvanized 7 or 19 Wires Twisted into a Single Strand

Made in three grades, or strengths to meet all requirements for durability, strength, toughness and light weight, i.e., Siemens-Martin Strand, High Strength (Cast Steel) Strand, Extra High Strength (Plow Steel) Strand.

All three are composed of seven or nineteen wires, having the heaviest coating of galvanizing that will insure the longest life.

Used for guying electric railway, telegraph and telephone poles, for supporting trolley wire on electric railroads, also for "messenger" purposes, where extra strengths are required.

The above grades of strand are made to meet the most rigid specifications as to galvanizing, tensile strength and other mechanical requirements—especially the specifications of the American Telegraph and Telephone Company, who are large users.

Siemens-Martin 7 Wires

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List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$8.25	$\frac{5}{8}$	.207	813	19,100
6.00	$\frac{9}{16}$	.188	671	15,700
5.25	$\frac{1}{2}$	.165	517	12,100
4.30	$\frac{7}{16}$	.145	399	9,350
3.25	$\frac{3}{8}$	.125	296	6,950
2.50	$\frac{5}{16}$	.104	205	5,350
2.05	$\frac{9}{32}$.093	164	4,250
1.70	$\frac{1}{4}$.080	121	3,150
1.35	$\frac{3}{16}$.072	72.9	1,900
.90	$\frac{1}{8}$.062	31.8	910

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19 Wires

.....	1	.200	2,073	47,000
\$16.65	$\frac{7}{8}$.175	1,581	35,900
13.35	$\frac{3}{4}$.150	1,155	26,200
10.00	$\frac{5}{8}$.125	796	18,100
8.25	$\frac{9}{16}$	.110	637	16,100
6.75	$\frac{1}{2}$	.100	504	12,700
5.60	$\frac{7}{16}$	....	395	9,000
4.50	$\frac{3}{8}$	....	288	6,800

(Minimum elongation in 24" length, all sizes 8%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

Perfected Extra Galvanized Special Steel Strand—Continued

High Strength

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7 Wires

List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$12.00	$\frac{5}{8}$	.207	813	29,600
9.50	$\frac{9}{16}$	.188	671	24,500
7.25	$\frac{1}{2}$	.165	517	18,800
6.00	$\frac{7}{16}$	.145	399	14,500
4.40	$\frac{3}{8}$	.125	296	10,800
3.20	$\frac{5}{16}$	.104	205	8,000
2.80	$\frac{9}{32}$.093	164	6,400
2.25	$\frac{1}{4}$.080	121	4,750
1.80	$\frac{3}{16}$.072	72.9	2,850
1.20	$\frac{1}{8}$.062	31.8	1,330

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19 Wires

.....	1	.200	2,073	73,200
\$23.50	$\frac{7}{8}$.175	1,581	55,800
17.50	$\frac{3}{4}$.150	1,155	40,800
12.25	$\frac{5}{8}$.125	796	28,100
10.65	$\frac{9}{16}$	.110	637	24,100
9.00	$\frac{1}{2}$	.100	504	19,100
7.00	$\frac{7}{16}$	....	395	15,000
5.25	$\frac{3}{8}$	....	288	11,500

(Minimum elongation in 24" length, all sizes 5%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

Perfected Extra Galvanized Special Steel Strand—Continued

Extra High Strength

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7 Wires

List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$14.60	$\frac{5}{8}$	.207	813	42,400
11.70	$\frac{9}{16}$	.188	671	35,000
8.80	$\frac{1}{2}$	.165	517	26,900
7.20	$\frac{7}{16}$	.145	399	20,800
5.25	$\frac{3}{8}$	.125	296	15,400
4.25	$\frac{5}{16}$	.104	205	11,200
3.50	$\frac{9}{32}$.093	164	8,950
2.85	$\frac{1}{4}$.080	121	6,650
2.40	$\frac{3}{16}$.072	72.9	3,990
1.60	$\frac{1}{8}$.062	31.8	1,830

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19 Wires

.....	1	.200	2,073	104,500
\$28.50	$\frac{7}{8}$.175	1,581	79,700
22.00	$\frac{3}{4}$.150	1,155	58,300
15.50	$\frac{5}{8}$.125	796	40,200
13.25	$\frac{9}{16}$	.110	637	33,700
11.00	$\frac{1}{2}$	.100	504	26,700
8.50	$\frac{7}{16}$	....	395	22,500
6.50	$\frac{3}{8}$	....	288	17,250

(Minimum elongation in 24' length, all sizes 4%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

Airplane Strand and Cord



List Per 100 Feet Tinned or Galv.	Diameter	Number of Wires	Approx. Weight per 1,000 Feet	Breaking Strength
\$5.25	$\frac{5}{16}$ "	19	214 lbs.	12,500 lbs.
4.75	$\frac{1}{4}$ "	19	136 lbs.	8,000 lbs.
4.50	$\frac{7}{32}$ "	19	106 lbs.	6,100 lbs.
3.75	$\frac{3}{16}$ "	19	75 lbs.	4,600 lbs.
2.90	$\frac{5}{32}$ "	19	57 lbs.	3,200 lbs.
2.50	$\frac{1}{8}$ "	19	35 lbs.	2,100 lbs.
2.15	$\frac{7}{64}$ "	19	28 lbs.	1,600 lbs.
2.00	$\frac{3}{32}$ "	19	20 lbs.	1,100 lbs.
1.90	$\frac{5}{64}$ "	19	14 lbs.	780 lbs.
1.75	$\frac{1}{16}$ "	19	8.8 lbs.	500 lbs.
.75	$\frac{1}{32}$ "	7	2.2 lbs.	185 lbs.

7 x 7 Construction

List per 100 Feet Tinned or Galv.	Diameter	Approx. Weight per 1,000 Feet	Breaking Strength
\$7.50	$\frac{5}{16}$ "	166 lbs.	9,200 lbs.
6.50	$\frac{1}{4}$ "	106 lbs.	5,800 lbs.
6.00	$\frac{7}{32}$ "	81 lbs.	4,600 lbs.
5.00	$\frac{3}{16}$ "	61 lbs.	3,200 lbs.
4.50	$\frac{5}{32}$ "	43 lbs.	2,600 lbs.
4.00	$\frac{1}{8}$ "	27 lbs.	1,350 lbs.
3.50	$\frac{3}{32}$ "	16 lbs.	920 lbs.
3.25	$\frac{5}{64}$ "	10.9 lbs.	550 lbs.
3.00	$\frac{1}{16}$ "	6.9 lbs.	480 lbs.

6 x 7 Construction, Cotton Center

\$13.00	$\frac{1}{2}$ "	391 lbs.	20,000 lbs.
11.00	$\frac{7}{16}$ "	300 lbs.	14,200 lbs.
8.50	$\frac{3}{8}$ "	214 lbs.	11,800 lbs.
7.00	$\frac{5}{16}$ "	148 lbs.	7,900 lbs.
6.50	$\frac{9}{32}$ "	121 lbs.	6,200 lbs.
6.25	$\frac{1}{4}$ "	96 lbs.	5,000 lbs.
5.75	$\frac{7}{32}$ "	73 lbs.	4,000 lbs.
4.75	$\frac{3}{16}$ "	55 lbs.	2,750 lbs.
4.25	$\frac{5}{32}$ "	38 lbs.	2,200 lbs.
3.75	$\frac{1}{8}$ "	24 lbs.	1,150 lbs.
3.50	$\frac{7}{64}$ "	19 lbs.	830 lbs.
3.25	$\frac{3}{32}$ "	14 lbs.	780 lbs.
3.00	$\frac{5}{64}$ "	10 lbs.	480 lbs.
2.75	$\frac{1}{16}$ "	6.2 lbs.	400 lbs.

7 x 19 Construction

\$15.50	$\frac{3}{8}$ "	232 lbs.	14,400 lbs.
15.00	$\frac{11}{32}$ "	195 lbs.	12,500 lbs.
14.50	$\frac{5}{16}$ "	161 lbs.	9,800 lbs.
14.25	$\frac{9}{32}$ "	131 lbs.	8,000 lbs.
14.00	$\frac{1}{4}$ "	103 lbs.	7,000 lbs.
9.50	$\frac{7}{32}$ "	79 lbs.	5,600 lbs.
8.25	$\frac{3}{16}$ "	60 lbs.	4,200 lbs.
7.00	$\frac{5}{32}$ "	42 lbs.	2,800 lbs.
6.25	$\frac{1}{8}$ "	27 lbs.	2,000 lbs.

All above made to latest U. S. Army, Navy and Naval Aircraft Factory specifications.

Power Transmitted by Wire Rope

A table showing the proper relation between the rope and wheels used in transmitting power by means of wire rope, and approximately the amount of power that may be thus transmitted. The calculations are based upon a rope of the 6 strand, 7 wires per strand construction.

Diameter of Wheel in Feet	Number of Revolutions per Minute	Diameter of Rope	Horsepower	Diameter of Wheel in Feet	Number of Revolutions per Minute	Diameter of Rope	Horsepower
3	80	$\frac{3}{8}$	3	9	80	$\frac{5}{8}$	48
3	100	$\frac{3}{8}$	$3\frac{1}{2}$			$\frac{9}{16}$	58
3	120	$\frac{3}{8}$	4	9	100	$\frac{5}{8}$	60
3	140	$\frac{3}{8}$	$4\frac{1}{2}$			$\frac{9}{16}$	69
4	80	$\frac{3}{8}$	4	9	120	$\frac{5}{8}$	73
4	100	$\frac{3}{8}$	5			$\frac{9}{16}$	82
4	120	$\frac{3}{8}$	6	9	140	$\frac{5}{8}$	84
4	140	$\frac{3}{8}$	7			$\frac{5}{8}$	64
5	80	$\frac{7}{16}$	9	10	80	$\frac{11}{16}$	68
5	100	$\frac{7}{16}$	11			$\frac{5}{8}$	80
5	120	$\frac{7}{16}$	13	10	100	$\frac{11}{16}$	85
5	140	$\frac{7}{16}$	15			$\frac{5}{8}$	96
6	80	$\frac{1}{2}$	14	10	120	$\frac{11}{16}$	102
6	100	$\frac{1}{2}$	17			$\frac{5}{8}$	112
6	120	$\frac{1}{2}$	20	10	140	$\frac{11}{16}$	119
6	140	$\frac{1}{2}$	23			$\frac{11}{16}$	93
7	80	$\frac{9}{16}$	20	12	80	$\frac{3}{4}$	99
7	100	$\frac{9}{16}$	25			$\frac{11}{16}$	116
7	120	$\frac{9}{16}$	30	12	100	$\frac{3}{4}$	124
7	140	$\frac{9}{16}$	35			$\frac{11}{16}$	140
8	80	$\frac{5}{8}$	26	12	120	$\frac{3}{4}$	149
8	100	$\frac{5}{8}$	32	12	120	$\frac{7}{8}$	173
8	120	$\frac{5}{8}$	39			1	141
8	140	$\frac{5}{8}$	45	14	80	$1\frac{1}{8}$	148
		$\frac{9}{16}$	47			1	176
				14	100	$1\frac{1}{8}$	185

Comparatively few places now use wire rope for power transmission only, but the above table gives data sufficient for such cases.

Recommended Fastenings for Wire Rope

The following figures based on actual tests, represent average values of percentage of total rope strength obtainable by various methods of rope fastenings and are listed in order of their reliability.

Method of Rope Fastening	% of Total Rope Strength Obtainable
Wire rope socket (attached with zinc per our standard method)	100
Thimble or eye splice in rope with four or five tucks	90
Thimble placed in end of rope and fastened with wire rope clips	85
Three bolt wire rope clamps	75

In the case of clips and clamps a sufficient number must be used to bring the percentage figure up to that given, our standard practice and recommendations conforming with the following tables. In the case of clips great care should be taken to see that the U-bolt bears on the short end of the rope so that the flat base of the clip rests on the tensile side of the rope, otherwise the rope will be injured by putting a crimp into the tension side.

Recommendation as to Number of Tiger Galvanized Drop Forged Wire Rope Clips Proper to Use to Obtain Maximum Percentage of Total Rope Strength

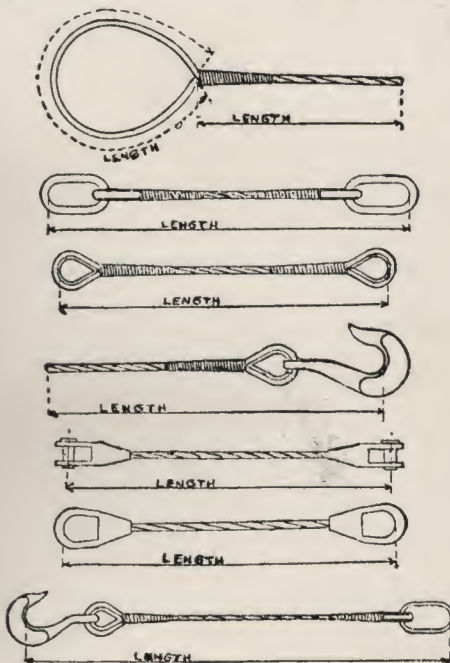
Size Clip Corresponding to rope diameter in inches	No. of Clips recommended to give Maximum Strength	Size of Stock in U-Bolt	Maximum Size of Wrench to be Used	Weight of Each
3	6	1 1/4	24	23.40
2 3/4	6	1 1/4	24	21.00
2 1/2	6	1 1/8	24	15.70
2 1/4	6	1 1/8	24	13.30
2	6	1	20	10.15
1 3/4	6	1	20	8.00
1 5/8	6	7/8	16	6.80
1 1/2	6	7/8	16	5.70
1 3/8	6	7/8	16	5.05
1 1/4	5	7/8	16	4.50
1 1/8	5	3/4	16	3.50
1	4	3/4	16	2.88
7/8	4	3/4	12	2.32
3/4	3	5/8	12	1.37
5/8	3	9/16	12	.93
1/2	2	1/2	12	.70
7/16	2	1/2	8	.37
3/8	2	3/8	8	.37
5/16	2	3/8	8	.30
1/4	2	3/8	8	.28

We recommend wire rope sockets for all permanent attachments. Clips may be used for temporary work or where the load is light. For main hoisting ropes nothing but sockets should be used.

Fittings Attached to Rope

The successful use of wire rope frequently depends upon the selection of the fitting or end-fastening. Therefore, we endeavor to carry a large stock of fittings in our various warehouses together with skilled labor for attaching them. Some of these fittings are clamped to the wire rope; some are fastened with molten metal; and others are spliced in.

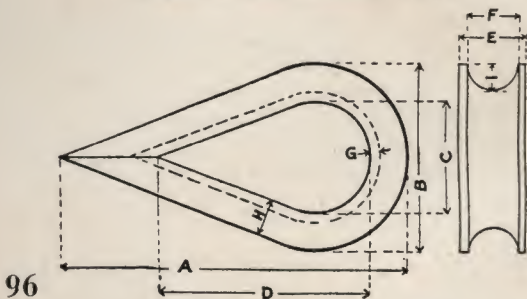
Fittings may be sold either loose or attached. If sold attached, great care must be exercised in submitting specifications, lest error be made in the length of rope overall. Usually it is advisable to submit rough sketches, as per the following:



When a rope is to have a fitting attached to one end, mention the length from the end of the rope to the "pull" of the fitting. When it is to have fittings attached to both ends, state the length from "Pull to Pull" of fittings.

Splicing: In ordinary wire rope practice there are three classes of splices i. e., the "End-to-End," the "Endless," and the "Thimble" splice.

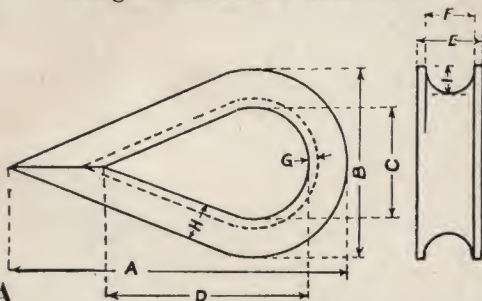
Regular Galvanized Thimbles



Diam. Rope	DIMENSIONS OF THIMBLES							Weight Each Lbs.	List Price of Thimble Loose	List Price* of Thimble Attached	Extra Rope Used Feet
	A	B	C	D	E	F	G				
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{3}{32}$	.031	\$0.035	1.26	1
$\frac{5}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{8}$	.050	.045	1.27	1
$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{1}{8}$	.070	.05	1.31	1
$\frac{7}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{7}{16}$	$\frac{1}{8}$	.120	.06	1.39	$1\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{8}$	.145	.065	1.82	2
$\frac{9}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{9}{16}$	$\frac{1}{8}$	.230	.08	1.89	2
$\frac{5}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{1}{4}$	.280	.09	2.35	2
$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{15}{16}$	$\frac{3}{4}$	$\frac{1}{2}$	.412	.11	2.71	$2\frac{1}{2}$
$\frac{7}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{7}{8}$	$\frac{1}{2}$	.48	.135	4.64	$2\frac{1}{2}$
1	$\frac{1}{4}$	3	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{13}{16}$	1	$\frac{1}{4}$	.60	.175	6.57	3
$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	2	$\frac{3}{8}$	$\frac{15}{16}$	$\frac{1}{2}$	$\frac{1}{4}$	.88	.315	7.80	3
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{17}{16}$	$\frac{1}{2}$	$\frac{1}{4}$	1.14	.365	9.12	$3\frac{1}{2}$
$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{19}{16}$	$\frac{3}{8}$	$\frac{1}{8}$	1.59	.78	12.53	$3\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{1}{2}$	$\frac{1}{8}$	1.97	1.00	16.75	4
$\frac{5}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{17}{16}$	$\frac{5}{8}$	$\frac{1}{2}$	2.00	1.165	19.67	4
$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	2	$\frac{13}{16}$	$\frac{1}{2}$	2.76	1.33	22.83	5
$\frac{7}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{21}{16}$	$\frac{7}{8}$	$\frac{1}{2}$	3.80	1.50	26.75	5
2	$\frac{1}{4}$	5	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{21}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	3.91	1.665	31.67	5

*Does not include price of extra rope used.

Large Galvanized Thimbles



96A

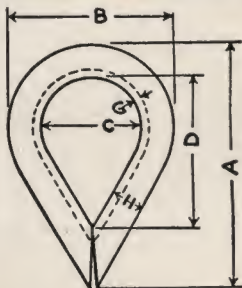
Diam. Rope	DIMENSIONS OF THIMBLES									Weight Each Lbs.	Last Price* of Thimble Loose	Last Price* of Thimble Attached	Extra Rope Used Feet
	A	B	C	D	E	F	G	H	I				
1 1/4	1 3/4	1 1/4	3/4	1	5/16	1/4	1/8	9/32	3/32	.035	\$.10	\$ 1.35	1
5/16	2 1/8	1 7/8	7/8	1 3/8	3/8	5/16	1/8	9/32	1/8	.06	.10	1.35	1
3/8	2 7/8	1 5/8	1	2	7/16	3/8	1/8	5/16	1/8	.12	.12	1.40	1
7/16	3	1 7/8	1 1/4	2 1/8	9/16	7/16	5/32	5/16	5/32	.14	.12 1/2	1.45	1 1/2
1 1/2	3 1/2	2 3/8	1 1/2	2 1/2	5/8	1/2	3/16	11/32	5/32	.155	.14	1.90	2
9/16	3 3/4	2 3/8	1 1/2	2 3/4	11/16	9/16	3/16	13/32	3/16	.31	.15 1/2	1.98	2 1/4
5/8	4 1/8	2 1/2	1 5/8	2 7/8	25/32	5/8	7/32	7/16	7/32	.31	.16	2.42	2 1/4
3/4	5 1/8	2 3/4	1 3/4	3 1/2	7/8	3/4	1/4	1/2	1/4	.45	.31	2.91	2 3/4
7/8	5 1/2	2 7/8	1 5/8	3 5/8	1	7/8	1/4	1/2	5/16	.55	.34	4.84	2 3/4
1	5 3/4	3 3/8	2 1/4	4	1 1/8	1	1/4	9/16	3/8	.81	.43	6.75	3 1/4
1 1/8	6 1/4	3 3/4	2 1/2	4 1/2	1 1/4	1 1/8	1/4	5/8	3/8	1.25	.56	8.05	3 1/4
1 1/4	6 1/2	4 1/8	2 5/8	4 1/4	1 7/16	1 1/4	1/4	11/16	7/16	1.50	.65	9.45	3 3/4
1 3/8	6 3/4	4 1/4	2 3/4	4 1/2	1 1/2	1 3/8	5/16	3/4	7/16	1.55	.85	12.70	3 3/4
1 1/2	7 1/4	4 5/8	3	5	1 11/16	1 1/2	3/8	13/16	7/16	2.16	1.80	17.50	4 1/8
1 5/8	8	5	3	5	1 7/8	1 5/8	3/8	1	5/8	4.00	1.90	20.40	4 1/8
1 3/4	8 1/2	5 3/8	3 1/8	5	2 1/8	1 3/4	1/2	1 3/16	1 1/16	4.25	2.20	23.70	5 1/2
1 7/8	9	5 3/4	3 1/4	5 1/4	2 1/4	1 7/8	1 1/2	1 1/4	3/4	5.25	2.83	28.10	5 1/2
2	9 3/4	6	3 3/8	5 1/2	2 3/8	2	1 1/2	1 5/16	13/16	5.50	3.40	33.20	5 1/2

*Does not include price of extra rope used.

Extra Heavy, Extra Large, Logging Thimbles

For Use with Plow and Monitor Rope and on Slings

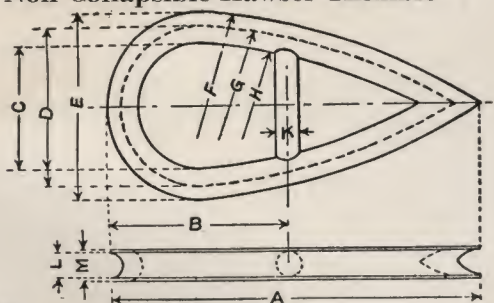
97



Diam. Rope	DIMENSIONS OF THIMBLES									Weight Each Lbs.	List Price of Thimble Loose	List Price* of Thimble Attached	Extra Rope Feet Used
	A	B	C	D	E	F	G	H	I				
1/4	3	1 13/16	1	1 1/8	7/16	5/16	7/64	13/32	1/4	187	...	...	...
5/16	3	1 13/16	1	1 7/8	7/16	5/16	7/64	13/32	1/4	187	...	...	...
3/8	3 1/2	2 3/16	1 5/16	2 1/8	5/8	7/16	8/64	1 1/2	9/32	250	...	...	...
7/16	3 1/2	2 3/16	1 5/16	2 1/8	5/8	7/16	8/64	1 1/2	9/32	250	...	...	...
1/2	4 1/4	2 5/8	1 7/16	2 1/2	23/32	1 1/2	10/64	5/8	3/8	375	...	...	...
5/8	4 5/8	3 1/16	1 13/16	3	7/8	5/8	11/64	21/32	3/8	625	\$0.35	\$2.60	2 1/2
3/4	5 3/8	3 7/16	2 1/8	3 1/2	1	3/4	14/64	3/4	7/16	812	.53	3.05	3
7/8	5 3/4	3 11/16	2 1/4	3 3/4	1 1/8	7/8	14/64	25/32	1/2	1,000	.63	5.24	3
1	6 1/2	4 3/16	2 7/16	4 1/8	1 1/4	1	14/64	15/16	9/16	1,625	.80	7.20	4
1 1/8	6 1/2	4 7/16	2 11/16	4 1/4	1 3/8	1 1/8	16/64	15/16	9/16	1,625	.95	8.50	4
1 1/4	7 1/4	4 5/8	2 7/8	4 3/8	1 9/16	1 1/4	16/64	11/16	5/8	2,000	1.26	10.00	4 1/2
1 3/8	8	5 3/16	2 7/8	4 1/2	1 5/8	1 3/8	16/64	1 3/8	5/8	3,75	1.50	13.30	4 1/2
1 1/2	8	5 3/16	2 7/8	4 1/2	1 7/8	1 1/2	24/64	1 3/8	3/4	3,75	2.12	17.80	5
1 5/8	9 1/2	6 1/2	3 1/2	5 1/2	2	1 5/8	24/64	1 5/8	1	4,875	...	...	...
1 3/4	9 1/2	6 1/2	3 1/2	5 1/2	2 1/8	1 3/4	24/64	1 5/8	1	4,875	...	...	...

*Does not include price of extra rope used.

Non Collapsible Hawser Thimble



98

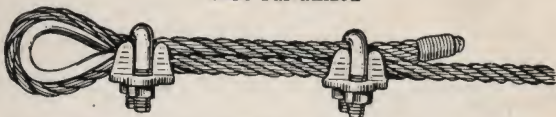
Steel Casting

Diam. Rope	DIMENSIONS OF THIMBLES										Weight Each Lbs.	List Price of Thimble Loose	List Price* of Thimble Attached	Extra Rope Used Feet
	A	B	C	D	E	F	G	H	K	L	M			
1 1/8	25	12	9	10 1/2	11 7/8	42 1/2	41 3/4	41	1 1/2	1 1/4	1 1/2	25	Prices upon application	5 1/2
1 1/4	25	12	9	10 1/2	12	42 1/2	41 3/4	41	1 1/2	1 3/8	1 5/8	28		5 1/2
1 3/8	26	12 1/4	9 1/2	11	12 5/8	42 3/4	42	41	1 1/2	1 1/2	1 7/8	38		5 1/2
1 1/2	26	12 1/2	9 1/2	11	12 3/4	42 3/4	42	41	1 1/2	1 5/8	2	43		6
1 5/8	27	12 3/4	9 1/2	11	12 7/8	43	42	41	1 1/2	1 3/4	2 1/8	50		6
1 3/4	27	13	9 1/2	11 1/2	13 1/2	43 1/4	42 1/4	41	1 1/2	1 7/8	2 1/4	60	Prices upon application	7
1 7/8	28	13 1/4	9 1/2	11 1/2	13 5/8	43 1/4	42 1/4	41	1 1/2	2	2 3/8	66		7
2	28	13 1/2	9 1/2	11 1/2	13 3/4	43 1/2	42 1/4	41	1 3/4	2 1/8	2 1/2	72		7
2 1/8	30	14	10	12 1/2	14 7/8	43 1/2	42 1/4	41	1 3/4	2 1/4	2 3/4	80		8
2 1/4	30	14 1/4	10	12 1/2	15	43 3/4	42 1/4	41	1 3/4	2 3/8	2 7/8	85		8

*Does not include price of extra rope used.

Tiger Wire Rope Clips

*Cold Galvanized



Light, Durable and Convenient—Easily Applied.
Reliable because they are drop forged.

They should not be confused with the cheaper cast slip.

Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each
3	\$35.00	1 3/4	\$5.50	1 1/8	\$0.95	1/2	\$0.45
2 3/4	25.00	1 5/8	3.50	1	.85	7/16	.45
2 1/2	11.50	1 1/2	1.50	7/8	.75	3/8	.40
2 1/4	9.50	1 3/8	1.25	3/4	.65	5/16	.35
2	7.50	1 1/4	1.10	5/8	.55	1/4	.35
						3/16	.35

*Cold galvanized clips will always be furnished on orders unless hot galvanized is specifically requested.

Hot Galvanized finish add 20% to above list prices.

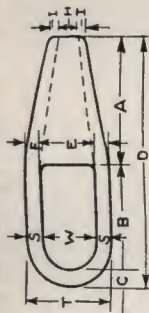
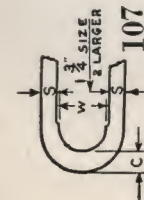
Tapering and Soldering or Welding Ends of Wire Rope

Rope ends are tapered and soldered in order to facilitate the installation of ropes, particularly steam shovel ropes. The tapered end is usually attached to the drum, and at the end of the taper there is a becket loop through which another piece of rope may pass to pull the rope through the hole in the drum. Care is taken when soldering and tapering the end of the rope, to see that the diameter of the rope is not increased. This overcomes the trouble experienced when heavy seizing is used which makes it impossible to pull the rope through the hole in the drum.

List Price Per End

Diameter of Rope	List Price	Diameter of Rope	List Price	Diameter of Rope	List Price
2 1/2	\$8.00	1 1/2	\$3.50	3/4	\$0.75
2 1/4	6.50	1 3/8	3.00	5/8	.65
2 1/8	5.75	1 1/4	2.50	9/16	.65
2	5.25	1 1/8	2.00	1/2 and 7/16	.60
1 3/4	4.50	1	1.25	3/8	.50
1 5/8	4.00	7/8	1.00	5/16 and 1/4	.45

“Tiger Brand” Closed Wire Rope Sockets



Dia. Rope	Drawing	A	B	C	D	F	G	H	I	J	R	S	T	W	Approx. Weight Each	List Price Loose, Each	List Price Attached, Each
$\frac{1}{4}$ - $\frac{5}{16}$	N-4850-B	2	$1\frac{13}{16}$	$\frac{7}{16}$	$4\frac{1}{4}$	$\frac{5}{16}$	$\frac{15}{16}$	$\frac{5}{16}$	$\frac{1}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{17}{16}$	$\frac{11}{16}$	0.5	\$ 0.70	\$ 1.70
$\frac{3}{8}$	N-4850-D	2	$2\frac{1}{16}$	$\frac{9}{16}$	$4\frac{5}{8}$	$\frac{5}{16}$	$\frac{19}{16}$	$\frac{7}{16}$	$\frac{5}{32}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{11}{16}$	$\frac{15}{16}$	0.8	.85	1.95
$1\frac{1}{2}$ - $\frac{9}{16}$	N-4850-F	$2\frac{1}{2}$	$2\frac{5}{16}$	$\frac{11}{16}$	$5\frac{1}{2}$	$\frac{3}{8}$	$\frac{17}{8}$	$\frac{9}{16}$	$\frac{3}{16}$	$\frac{15}{16}$	$\frac{7}{8}$	$\frac{7}{16}$	2	$1\frac{1}{8}$	1.6	1.20	2.70
$\frac{5}{8}$	N-4850-K	3	$2\frac{9}{16}$	$\frac{13}{16}$	$6\frac{3}{8}$	$\frac{1}{2}$	$\frac{23}{8}$	$\frac{11}{16}$	$\frac{7}{32}$	$\frac{11}{8}$	1	$\frac{5}{8}$	$\frac{25}{8}$	$\frac{13}{8}$	3.0	1.45	3.00
$\frac{3}{4}$	N-4850-H	$3\frac{1}{2}$	$3\frac{1}{16}$	$\frac{11}{16}$	$7\frac{5}{8}$	$\frac{9}{16}$	$\frac{23}{4}$	$\frac{13}{16}$	$\frac{7}{32}$	$\frac{11}{4}$	$1\frac{1}{4}$	$\frac{11}{16}$	3	$1\frac{5}{8}$	4.5	1.90	3.65
$\frac{7}{8}$	N-4851-B	4	$3\frac{5}{8}$	$1\frac{1}{4}$	$8\frac{7}{8}$	$\frac{11}{16}$	$\frac{31}{4}$	$\frac{15}{16}$	$\frac{9}{32}$	$\frac{11}{2}$	$1\frac{1}{2}$	$\frac{7}{8}$	$\frac{35}{8}$	$\frac{17}{8}$	7.0	2.75	5.25
1	N-4851-D	$4\frac{1}{2}$	$4\frac{1}{8}$	$\frac{13}{8}$	10	$\frac{3}{4}$	$\frac{33}{4}$	$\frac{11}{8}$	$\frac{5}{16}$	$\frac{13}{4}$	$1\frac{3}{4}$	$\frac{15}{16}$	$\frac{41}{8}$	$\frac{21}{4}$	11.0	3.75	6.75
$1\frac{1}{8}$	N-4852-B	5	$4\frac{5}{8}$	$1\frac{1}{2}$	$11\frac{1}{8}$	$\frac{13}{16}$	$\frac{41}{8}$	$\frac{11}{4}$	$\frac{3}{8}$	2	2	1	$\frac{41}{2}$	$\frac{21}{2}$	16.0	4.50	8.50
$1\frac{1}{4}$	N-4852-D	$5\frac{1}{2}$	$5\frac{3}{16}$	$\frac{15}{8}$	$12\frac{5}{16}$	1	$\frac{43}{4}$	$\frac{13}{8}$	$\frac{7}{16}$	$\frac{21}{4}$	$2\frac{1}{4}$	$\frac{11}{8}$	5	$\frac{23}{4}$	22.0	7.50	12.75
$1\frac{3}{8}$	N-4852-F	$5\frac{1}{2}$	$5\frac{3}{16}$	$\frac{15}{8}$	$12\frac{5}{16}$	1	$\frac{43}{4}$	$\frac{11}{2}$	$\frac{3}{8}$	$\frac{21}{4}$	$2\frac{1}{4}$	$\frac{11}{8}$	5	$\frac{23}{4}$	22.0	7.50	13.00
$1\frac{1}{2}$	N-4853-B	6	$6\frac{3}{16}$	$1\frac{15}{16}$	$14\frac{1}{8}$	$\frac{11}{16}$	$\frac{51}{4}$	$\frac{15}{8}$	$\frac{9}{16}$	$\frac{23}{4}$	$2\frac{1}{2}$	$\frac{11}{8}$	$\frac{53}{8}$	$\frac{31}{8}$	28.0	11.00	18.00
$1\frac{5}{8}$	N-4854-B	$6\frac{1}{2}$	$6\frac{3}{4}$	$2\frac{1}{8}$	$15\frac{3}{8}$	$\frac{11}{8}$	$\frac{51}{2}$	$\frac{13}{4}$	$\frac{5}{8}$	$\frac{3}{2}$	$2\frac{3}{4}$	$\frac{11}{4}$	$\frac{53}{4}$	$\frac{31}{4}$	36.0	11.00	18.50
$1\frac{3}{4}$	N-4855-B	$7\frac{1}{2}$	$7\frac{13}{16}$	$2\frac{3}{16}$	$17\frac{1}{2}$	$\frac{15}{16}$	$\frac{63}{8}$	$\frac{17}{8}$	$\frac{5}{8}$	$\frac{31}{8}$	3	$\frac{11}{2}$	$\frac{63}{4}$	$\frac{31}{2}$	53.0	16.75	24.75
$1\frac{7}{8}$	N-4855-D	$7\frac{1}{2}$	$7\frac{13}{16}$	$2\frac{3}{16}$	$17\frac{1}{2}$	$\frac{15}{16}$	$\frac{63}{8}$	2	$\frac{9}{16}$	$\frac{31}{8}$	3	$\frac{11}{2}$	$\frac{63}{4}$	$\frac{31}{2}$	53.0	22.75	32.25
2	N-4856-B	$8\frac{1}{2}$	$8\frac{13}{16}$	$2\frac{7}{16}$	$19\frac{3}{4}$	$\frac{17}{16}$	$\frac{71}{4}$	$\frac{21}{8}$	$\frac{13}{16}$	$\frac{33}{4}$	$3\frac{1}{4}$	$\frac{15}{8}$	$\frac{75}{8}$	$\frac{325}{32}$	80.0	22.75	33.75
$2\frac{1}{4}$	N-4860-A	9	$9\frac{3}{4}$	$2\frac{7}{8}$	$21\frac{5}{8}$	$\frac{15}{8}$	$\frac{81}{4}$	$\frac{23}{8}$	$\frac{13}{16}$	$\frac{4}{4}$	$3\frac{5}{8}$	$\frac{13}{4}$	$\frac{81}{2}$	$\frac{49}{32}$	105.0	27.00	41.00

"Tiger Brand" Open Wire Rope Sockets



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Drawing	A	B	C	D	E	F	G	H	I	J	K	L	N	O	P	Q	$\frac{1}{2} \phi$	Approx. Weight Each	List Price Loose Each	List Price Attached Each
N-4850-A	2	$1\frac{1}{16}$	$\frac{3}{4}$	$4\frac{5}{16}$	$1\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{5}{16}$	$\frac{1}{8}$	$\frac{9}{16}$	$1\frac{1}{16}$	$\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{1}{16}$	$1\frac{1}{8}$	$\frac{7}{8}$	$\frac{3}{16}$	0.9	\$ 1.25	\$ 2.25
N-4850-C	2	$1\frac{3}{4}$	$\frac{7}{8}$	$4\frac{5}{8}$	$1\frac{1}{2}$	$\frac{5}{16}$	$1\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{16}$	1.1	1.35	2.45
N-4850-E	2	$2\frac{1}{2}$	$1\frac{1}{16}$	$5\frac{9}{16}$	$2\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{2}$	$\frac{9}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	$\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{3}{8}$	$2\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{16}$	2.3	1.80	3.30
N-4850-J	3	$2\frac{1}{2}$	$1\frac{1}{4}$	$6\frac{3}{4}$	$2\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{11}{16}$	$\frac{7}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$\frac{5}{8}$	$2\frac{1}{4}$	$1\frac{3}{8}$	$3\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	3.8	2.25	3.80
N-4850-G	$3\frac{1}{2}$	3	$1\frac{1}{16}$	$7\frac{15}{16}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$\frac{13}{16}$	$\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$\frac{5}{8}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$3\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	6.0	2.85	4.60
N-4851-A	4	$3\frac{1}{2}$	$1\frac{3}{4}$	$9\frac{1}{4}$	$4\frac{1}{2}$	$\frac{5}{8}$	$1\frac{3}{4}$	$\frac{15}{16}$	$\frac{9}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$\frac{3}{4}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$3\frac{7}{8}$	$\frac{1}{2}$	$\frac{5}{16}$	10.0	3.55	6.05
N-4851-C	$4\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{16}$	$10\frac{9}{16}$	$5\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{2}$	$\frac{11}{16}$	$\frac{5}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$\frac{7}{8}$	$3\frac{3}{4}$	$2\frac{1}{4}$	$4\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	15.5	4.75	7.75
N-4852-A	5	$4\frac{1}{2}$	$2\frac{5}{16}$	$11\frac{13}{16}$	$6\frac{1}{2}$	$\frac{3}{4}$	$2\frac{3}{4}$	$\frac{11}{16}$	$\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	1	$4\frac{1}{4}$	$2\frac{1}{4}$	5	$\frac{1}{2}$	$\frac{3}{8}$	22.0	5.25	9.25
N-4852-C	$5\frac{1}{2}$	5	$2\frac{11}{16}$	$13\frac{3}{16}$	$7\frac{1}{2}$	$\frac{15}{16}$	$2\frac{3}{4}$	$\frac{11}{16}$	$\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{1}{8}$	$4\frac{3}{4}$	$2\frac{1}{2}$	$5\frac{5}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	32.0	9.00	14.25
N-4852-E	$5\frac{1}{2}$	5	$2\frac{11}{16}$	$13\frac{3}{16}$	$7\frac{1}{2}$	$\frac{15}{16}$	$2\frac{3}{4}$	$\frac{11}{16}$	$\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{1}{8}$	$4\frac{3}{4}$	$2\frac{1}{2}$	$5\frac{5}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	32.0	9.00	14.50
N-4853-A	6	$3\frac{1}{8}$	$3\frac{1}{8}$	$15\frac{1}{8}$	$8\frac{1}{4}$	3	3	$\frac{15}{16}$	$\frac{9}{16}$	$2\frac{3}{4}$	3	$1\frac{3}{8}$	$5\frac{3}{8}$	$2\frac{3}{4}$	$6\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	46.0	15.25	22.25
N-4854-A	$6\frac{1}{2}$	$6\frac{1}{2}$	$3\frac{1}{4}$	$16\frac{1}{4}$	$9\frac{1}{4}$	$1\frac{1}{8}$	$3\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{8}$	3	3	$1\frac{5}{8}$	$6\frac{1}{2}$	$3\frac{1}{2}$	$6\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	55.0	15.25	22.75
N-4855-A	$7\frac{1}{2}$	$7\frac{1}{2}$	$3\frac{3}{4}$	$18\frac{1}{4}$	$11\frac{1}{4}$	$1\frac{1}{8}$	$3\frac{7}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$3\frac{1}{4}$	$3\frac{1}{2}$	$1\frac{7}{8}$	$7\frac{1}{2}$	$4\frac{1}{2}$	$7\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	82.0	23.00	31.00
N-4855-C	$7\frac{1}{2}$	$7\frac{1}{2}$	$3\frac{3}{4}$	$18\frac{1}{4}$	$11\frac{1}{4}$	$1\frac{1}{8}$	$3\frac{7}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$3\frac{1}{4}$	$3\frac{1}{2}$	$1\frac{7}{8}$	$7\frac{1}{2}$	$4\frac{1}{2}$	$7\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	82.0	31.50	41.00
N-4856-A	$8\frac{1}{2}$	9	4	$21\frac{1}{2}$	$14\frac{1}{2}$	$1\frac{1}{4}$	$4\frac{1}{4}$	$\frac{1}{2}$	$\frac{13}{16}$	$3\frac{3}{4}$	4	$1\frac{13}{16}$	$8\frac{3}{4}$	$5\frac{1}{4}$	$8\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	120.0	31.50	42.50

Grooves in Baskets: One in Sizes $\frac{1}{4}$ "- $\frac{3}{4}$ "; Two in Sizes $\frac{1}{2}$ "- $1\frac{1}{2}$ "; Three in Sizes $1\frac{1}{2}$ " and larger. Pins are Turned. Holes are $\frac{1}{8}$ " larger than Pin Diameters.

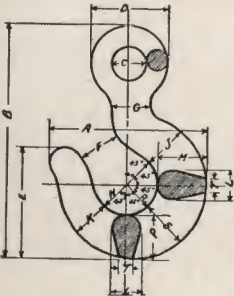
Size of Hooks to be Used On Wire Ropes of Construction Shown

Use Hook No.	Ulti- mate Capac- ity Lbs.	Safe Load Lbs.	6x7, 6x29,				6x21, 18x7.				6x33, 6x37.				8x19.			
			Cast Steel	Extron	Plow	Moni- tor	Cast Steel	Extron	Plow	Moni- tor	Cast Steel	Extron	Plow	Moni- tor	Cast Steel	Extron	Plow	Moni- tor
10	4000	1000	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	...	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
15	6000	1500	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$
20	8000	2000	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
30	12000	3000	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$
40	16000	4000	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
50	20000	5000	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{9}{16}$
60	24000	6000	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{5}{8}$
75	30000	7500	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{13}{16}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{11}{16}$
90	36000	9000	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{11}{16}$	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$
120	48000	12000	1	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	1	1	$\frac{7}{8}$	$\frac{7}{8}$	1	1	$\frac{7}{8}$	$\frac{7}{8}$	1	1	$\frac{7}{8}$	$\frac{7}{8}$
150	60000	15000	$\frac{1}{8}$	1	1	$\frac{7}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	1	1
200	80000	20000	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	1	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$
240	96000	24000	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
280	112000	28000	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
340	136000	34000	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
400	160000	40000	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
440	176000	44000	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
500	220000	50000	$\frac{1}{2}$	2	2	$\frac{1}{4}$	$\frac{1}{2}$	2	2	2	$\frac{1}{2}$	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
600	240000	60000	$\frac{1}{2}$	$\frac{1}{2}$	2	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	2	2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

See next page.

Hooks—Plain Finish

*For list price of hooks attached add price loose, to list price of thimble or socket attached as called for. For size of hook to use with ropes of different sizes and construction, see page 85.



Hook No.	DIMENSIONS OF HOOKS																Lbs. Est. Weight Each	List Price Each	
	A	B	C	D	E	F	G	H	J	K	L	M	P	R	S	T		Regular	Prices upon application
10	2 7/8	4 1/2	3/4	1 1/2	2 1/2	1 1/2	3/4	1 1/2	1 1/2	3/4	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 3/4		
15	3 3/8	5 1/4	7/8	1 7/8	2 3/4	1 3/4	13/16	1 3/4	1 3/4	7/8	13/16	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4		
20	3 7/8	5 3/4	1	2 1/8	3	1 7/8	1 1/2	1 7/8	1 7/8	1 1/2	1 1/2	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4		
30	4 9/16	6 3/4	1 1/4	2 3/8	3 3/8	2 1/4	1 3/4	2 1/4	2 1/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4		
40	4 3/4	7 1/2	1 1/2	2 3/4	3 3/4	2 3/8	1 1/2	2 3/8	2 3/8	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4		
50	5 1/2	8 1/4	1 1/2	3 1/4	4	2 1/2	1 3/8	2 1/2	2 1/2	1 3/8	1 3/8	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4		
60	6	9 1/4	1 3/4	3 1/2	4 3/8	2 3/4	1 1/4	2 3/4	2 3/4	1 3/4	1 3/4	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8		
75	6 3/4	10 1/4	1 3/4	3 3/4	4 3/4	2 3/4	1 1/2	2 3/4	2 3/4	1 3/4	1 3/4	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8		
90	7 5/8	11 1/4	2	4 1/2	5 3/8	2 3/4	1 3/4	2 3/4	2 3/4	1 3/4	1 3/4	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8		
120	8 1/4	13	2 1/4	4 1/2	6	2 3/4	1 3/4	2 3/4	2 3/4	1 3/4	1 3/4	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8		
150	8 7/8	14 1/2	2 1/2	5 1/2	6 3/8	2 3/4	1 3/4	3	2 3/4	2 3/4	2 3/4	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8		
200	10 3/16	15 1/2	2 3/4	5 1/2	6 7/8	2 3/4	2 1/4	3 3/8	3 3/8	2 3/4	2 3/4	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8		
240	11	16 1/2	3	6 1/2	7 1/2	2 3/4	2 1/4	3 3/8	3 3/8	2 3/4	2 3/4	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8	3 3/8		
280	12 1/8	18	3 1/4	6 1/2	8 1/8	3 3/4	2 1/4	4 1/8	4 1/8	3 1/4	3 1/4	4 1/8	4 1/8	4 1/8	4 1/8	4 1/8	4 1/8		
340	13 3/8	19 3/4	3 1/2	7 1/4	8 15/16	3 3/4	2 1/4	4 1/8	4 1/8	3 1/2	3 1/2	4 1/8	4 1/8	4 1/8	4 1/8	4 1/8	4 1/8		
400	14 1/2	21 1/2	3 3/4	8	9 5/8	4	2 3/4	5 1/8	4 3/8	3 3/8	3 3/8	5 1/4	4 3/8	4 3/8	5	5 1/8	5 1/8		
440	15 1/8	23 1/4	4	8 1/2	10 1/4	4 1/4	3 3/4	5 1/2	4 3/4	4 1/4	4 1/4	5 3/4	4 3/4	4 3/4	5 3/8	5 3/8	5 3/8		
500	16 1/2	24 1/2	4 1/4	9 1/4	11	4 3/4	3 3/4	5 3/4	5 3/4	5 1/8	5 1/8	6 1/2	5 1/8	5 1/8	6 1/8	6 1/8	6 1/8		
600	18 1/2	26	4 1/2	9 1/2	11 3/4	5	3 3/4	6	5 3/4	5 1/8	4 1/4	6 1/2	5 5/8	5 5/8	6 1/8	2	2		

Turnbuckles



113
Eye and
Hook



113A
Shackle
and Eye

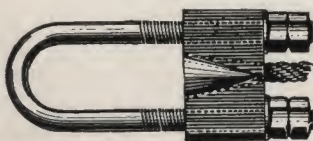


113B
Two
Eyes



113C
Two
Shackles

Bridge Sockets



111
Closed Type



112
Open Type

These sockets are constructed throughout of steel and are suitable for attaching to the galvanized bridge cables and may also be used on the locked tramway and cableway strand or any rope that corresponds in size to the opening. They develop the full strength of the rope when properly attached.

Unreeling and Uncoiling Wire Rope

The Right and Wrong Way to Take Rope From Reel or Coil—Simple Methods of Doing the Work Which Will Prevent Kinking—Manner of Removing a Kink If One Should Appear.

By C. S. Knight, Jr.

Removal of wire rope from a reel or a coil often is done with permanent damage to the rope. This for the reason that employees fail to comprehend there are simple methods for accomplishing this work—just as simple as the wrong methods employed.

The kinking of a wire rope, if the kink is pulled through, permanently incapacitates it for further service with consequent loss to the buyer and unfair criticism of the manufacturer who sometimes receives blame for instability of a rope when the damage was entirely done by the method used in unreeling or uncoiling.

When rope is received on a reel there are two methods by which it can be properly removed. The first method requires the insertion through the reel of a steel or iron bar, and with the use of two jacks the reel is lifted off the ground. Taking the end of the rope over the right shoulder the workman moves directly ahead until all or a sufficient quantity of the rope is unreeled. The second method does not require jacks or axle. The position of the reel is upright. Two men are necessary, one standing to the right side of the reel, the other to the left. The first coil or "bite" is lifted by one of the men and thrown to his side of the reel. The other man lifts the second coil and drops it on his side of the reel, and both proceed alternately in the same way until, in the case of a $\frac{5}{8}$ -inch rope being handled, about 500 feet or less, if sufficient for the purpose, is thrown off. Then the reel is moved backwards enough to clear the coils thrown off, which take the positions of figure eights, and the same procedure continues until all the rope is unreeled. With sizes of rope smaller than $\frac{5}{8}$ " it is practical to throw off more than 500 feet, but with rope larger than $\frac{5}{8}$ inch, not more than 200 feet should be attempted.



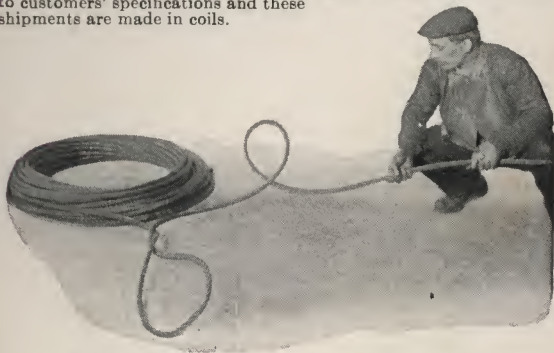
Incorrect way of taking wire rope from a reel.



One of two correct ways of taking rope from a reel.

Nothing is more disastrous than the attempt to take wire rope from a reel while the reel is lying upon one side. In the manufacture of wire rope special effort is made to see that there is no torsion put into the wire or strands so that the rope will have the least tendency to untwist. In other words the construction of a wire rope is such that the twist in the making is given a permanent set. It is very easy to take a heavy reel of wire rope lying flat on the ground and pull the rope off the end of the reel and thus put a kink into it with nearly every loop. These kinks, when the rope is stretched out and put under the stresses of service, become set in the rope so that after it has been used in this manner for a while it is almost impossible to straighten out the kinks.

Shipments of wire rope often are made in short lengths according to customers' specifications and these shipments are made in coils.



Incorrect method of taking rope from a coil.



The second correct method of taking rope from a reel.

Right Way to Unreel Wire Rope

As in the case of unreeling there are two methods by which rope may be safely uncoiled. Number one is by the use of a turntable upon which the coil is placed and the turntable revolves as the rope is pulled off. If no turntable is available, the number two method may be used as follows: Lay the coil flat, select the outside end and carry it away from the coil in a direct line until the rope shows a tendency to kink. Then reverse position of the coil or in other words, throw it over and proceed as before, continuing the same plan until the rope is entirely uncoiled. The distance the rope may be carried each time before signs of kinking are shown is about 75 feet. For sizes of rope larger than one inch in diameter it is advisable to use a turntable. All that has been said herein with regard to the advisa-



Illustration shows kink in wire rope.



Pushing rope back into proper position for use of kink iron.

bility of pulling wire rope from a reel without using one of the two methods described applies in an equally forcible manner to uncoiling wire rope. Wire rope cannot be uncoiled without kinking except by the two processes recommended. Kinking will surely result if wire rope is taken from a coil in the same manner as hemp rope, that is, pulled out of the coil in place of unwinding.

It is possible to remove a kink that has not reached the stage that is commonly known as "pulling through" without subjecting the rope to damage or injuring its serviceability. The removal while not an intricate operation is one that at the beginning of the action to straighten the strands, requires a pressure which can be brought to bear upon each of the individual strands so as to shape them into their normal position.

One method of obtaining pressure at the proper angles is by the use of a tool which can be quickly and easily made. It consists of a three-foot piece of $\frac{7}{8}$ -inch steel, and having welded at one end in tandem position two 3-inch pieces of $\frac{7}{8}$ -inch steel. One of these two pieces is placed one inch from end of bar and the second piece two inches from the first. The outside end of each piece is slightly beveled. The construction enables the operator to place a heavy pressure upon each strand in turn by means of the leverage of the bar. One man can handle it easily.



Kink iron in place for removal of kink.

How to Splice Wire Rope

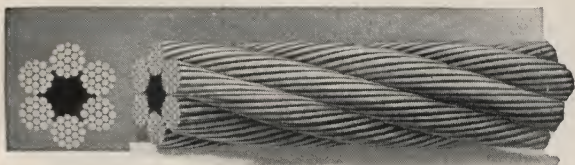
Standard Tools Used

In presenting this information on splicing methods, the aim has been to show the best and most widely used methods of making eye splices, endless splices and socket attachments. In each case other methods may be used, but those shown are the best of their kind and when made with care will give entire satisfaction.

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Directions for Splicing 6-Strand Ropes



In splicing endless ropes, a certain length is used up in making the splice. An allowance of not less than 16 ft. for $\frac{1}{2}$ -in. rope and proportionately longer for larger sizes must be added to the length of an endless rope in ordering.

The additional length recommended for making a splice in different sizes of wire rope is as follows:

Diam. of Rope in Inches	Extra Length Allowed for Splice Put in	Diam. of Rope in Inches	Extra Length Allowed for Splice Put in
$\frac{3}{8}$	16	1	32
$\frac{1}{2}$	16	$1\frac{1}{8}$	36
$\frac{5}{8}$	20	$1\frac{1}{4}$	40
$\frac{3}{4}$	24	$1\frac{1}{2}$	44
$\frac{7}{8}$	28		

Having measured carefully the length allowed for the splice, place a seizing on each end of rope where the splicing lengths have been allowed. Unlay the strands from each end and cut off the hemp centers. Figs 1 and 2.

1. Interlock the six inlaid strands of each end in a finger lock position as shown in diagrammatical cut, Fig. 3.

2. Take any one strand and unlay from one end, following the seam of grooves vacated by the strand in the opposite end. When the distance of the splice has been reached, assuming it to be 16 inches on a 16-ft. splice, cut off the ends of both strands at equal length as shown in Fig. 4.

Take the next adjacent strand in the opposite direction, following the unlay closely, lay in its place the corresponding opposite strand, cutting off the ends as described before. Fig. 5.

Follow the same procedure in the next eight strands as you did in the previous four, leaving space between each laid-in strand equal to the length of the corresponding ends that have been cut off.

All the strands are now laid in their proper places with their respective ends ready for tucking, as in Fig. 6. All methods of rope splicing are nearly identical up to this point; their variety consists in the securing of the ends. The most helpful way for the beginner is as follows:

Place rope in a vise at a point where one of the ends are extended and apply splicing tongs or a hand clamp to rope. Untwist rope sufficiently to cut hemp core at the root of the end that is to be tucked and let your assistant draw it out slowly. Then insert a marlin spike under the two nearest strands and open up the rope,

Directions for Splicing 6-Strand Ropes—Continued

starting the loose strand into the space left vacant by the hemp center. Rotate the marlin spike so as to run the strand into the center, cut out the hemp core where the strand ends, and insert the end of hemp back into its place. Remove the clamps or tongs and let the rope close together around it. Draw out the hemp core in the opposite direction and lay the other strand in the center of rope in the same manner. Repeat the operation at the five remaining points and hammer the rope lightly, where the ends pass each other, with small wooden mallets making the splice complete as shown in Figs. 7, 8, 9 and 10.

If a clamp and vise are not obtainable, a rope sling and a short wooden lever may be used to untwist and open up the rope. A rope spliced in this manner will be nearly as strong as the original rope and smooth everywhere. After running a few days, the splice, if well made, cannot be pointed out except by the close examination of an expert.

The accompanying illustrations on endless splicing should be very helpful in doing this sort of work.

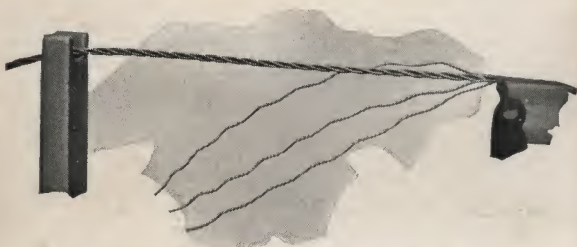


Fig. 1. Starting point of an endless rope.

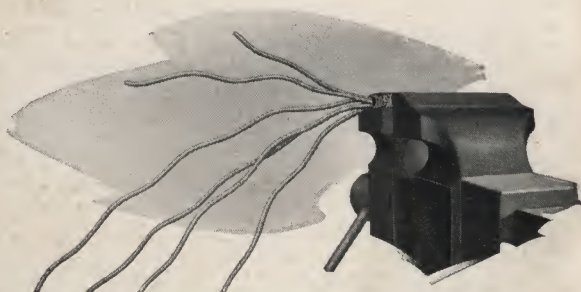


Fig. 2. The hemp center has been cut out back to seizing.

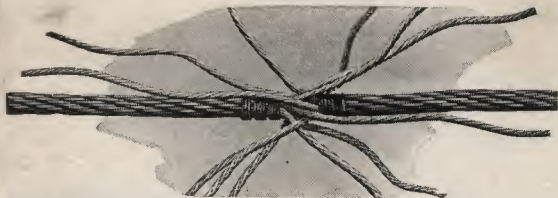


Fig. 3. The strands are now interlocked in a finger lock position.

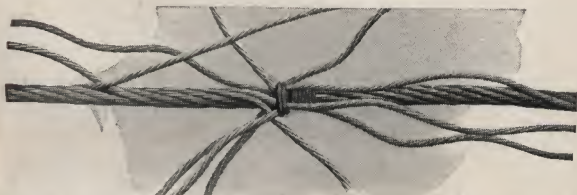


Fig. 4. Rope in a finger lock position with one strand laid in rope.

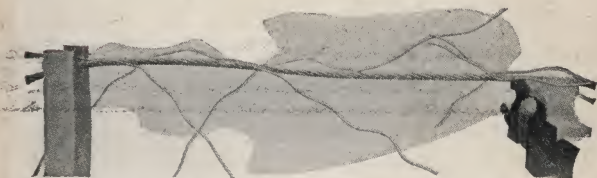


Fig. 5. The three strands on one end are now laid in. These are now to be cut off. Take the strands on the opposite end of the rope and repeat the operation.

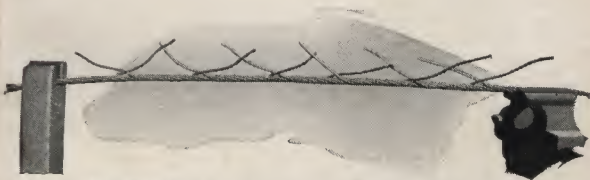


Fig. 6. All six strands are laid in rope. The short ends are now ready to be tucked in.

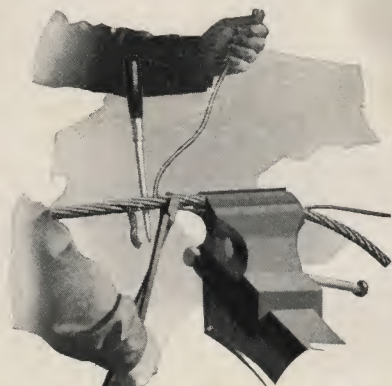


Fig. 7. Splicer about to weave strand into center.



Fig. 8. Rotating the spike and weaving-in the strand.



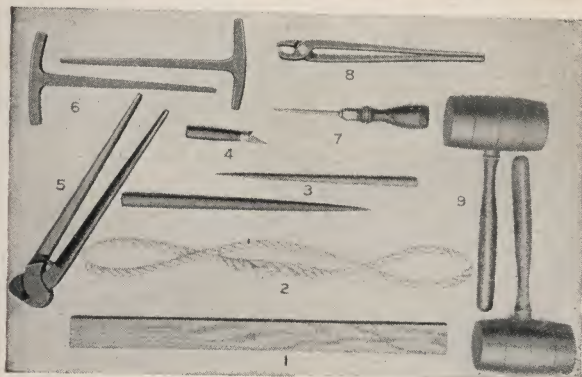
Fig. 9. Removing the inequalities in the rope.



Fig. 10. The completed endless splice.



Fig. 11. An endless rope after all six tucks are given.



- | | |
|----------------------|---------------------------------|
| 1. Hickory Lever | 6. T Spikes |
| 2. Marlin Rope Sling | 7. Wooden Handle, Splicing Pins |
| 3. Marlin Spikes | 8. Splicing Tong |
| 4. Shoemaker's Knife | 9. Hickory Mallets |
| 5. Carew Cutters | |

Standard Splicing Outfits for Endless Splicing

Prices on the following splicing outfits will be quoted on application:

$\frac{5}{8}$ " Rope and Smaller

- 2— $3\frac{1}{2}$ " wooden mallets
- 1 pr. 14" Carew cutters
- 2— $9 \times \frac{3}{8}$ " wooden handle, splicing pins
- 2— $8 \times \frac{1}{4}$ " wooden handle, splicing pins
- 1 shoemaker's knife
- 1 splicing tong
- 1 hickory lever, $2 \times 2 \times \frac{3}{4}$ "
- 1— $4\frac{1}{2}$ " diam. marlin rope sling

1" to $\frac{5}{8}$ " Rope

- 2— $3\frac{1}{2}$ " hickory mallets
- 1 pr. 14" Carew cutters
- 2— $9 \times \frac{3}{8}$ " wooden handle, splicing pins
- 2—8" T spikes
- 1— $13 \times \frac{7}{8}$ " marlin spike
- 1 shoemaker's knife
- 1 splicing tong
- 1 hickory lever, $2 \times 2 \times \frac{3}{4}$ "
- 1— $4\frac{1}{2}$ " diam. marlin rope sling

$1\frac{1}{2}$ " to 1" Rope

- 2— $3\frac{1}{2}$ " hickory mallets
- 1 pr. 14" Carew cutters
- 2—10" T spikes
- 1— $14 \times \frac{7}{8}$ " marlin spike
- 1— 16×1 " marlin spike
- 1 shoemaker's knife
- 1 splicing tong
- 1 hickory lever, $2 \times 2 \times 1$ "
- 1— $5\frac{5}{8}$ " diam. marlin rope sling

2" to $1\frac{1}{2}$ " Rope

- 2— $3\frac{1}{2}$ " hickory mallets
- 1 pr. 14" Carew cutters
- 2—16" T spikes
- 1— 16×1 " marlin spike
- 2— $24 \times 1\frac{1}{4}$ " marlin spikes
- 1 shoemaker's knife
- 1 splicing tong
- 1 hickory lever, $2 \times 2 \times 1$ "
- 1— $5\frac{5}{8}$ " diam. marlin rope sling

Directions for Splicing 8-Strand Rope

The making of an 8-strand splice, or the Nash tuck, as it is termed, is identically the same as the 6-strand splice up to the point where all the strands are laid in with ends projecting. See diagrammatical cuts on page 85, Fig. 6.

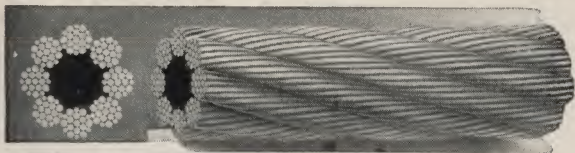


Fig. 1. Now that the 8 strands are projecting from the rope twelve inches, take small spike and divide strand in two.

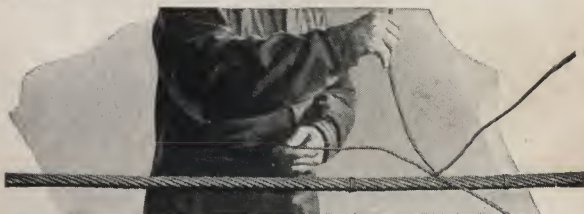


Fig. 2. Place a seizing on each side of the rope where the strands project, and unlay one-half of each strand one rope lay apart.

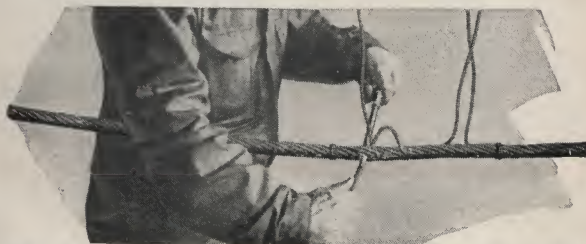


Fig. 3. Insert spike under three strands, pulling each strand through in opposite directions.



Fig. 4. By taking one-half of each strand and tying a double knot gives a result as shown in the photograph.

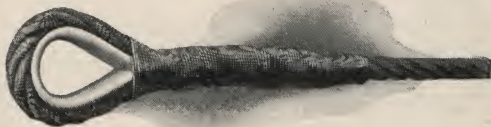


Fig. 5. Now that a double knot is tied, some form of a hand clamp should be used for pulling the knot tightly together.



Fig. 6. Cut off ends close to the rope as shown in the illustration and force ends into the valley between the strands. To complete work, remove the inequalities in the rope with two wooden mallets.

Galvanized Thimble Spliced into Rope



Our Galvanized Oval Thimbles are Heavily Coated with Zinc

Directions for Splicing a Four-Tuck Splice

In making short splices, a rigger's vise is the best adapted for this particular kind of work, although a common bench vise is very convenient and fully as good. When splicing wire ropes, an extra length is always allowed for the splice, this depending on the size rope. The extra lengths usually allowed are as follows:

$\frac{1}{4}$ — $\frac{3}{8}$	1 ft.	$1\frac{1}{4}$	$3\frac{1}{2}$ ft.
$\frac{1}{2}$	$1\frac{1}{2}$ ft.	$1\frac{1}{2}$	4 ft.
$\frac{5}{8}$ — $\frac{3}{4}$	2 ft.	$1\frac{3}{4}$	$4\frac{1}{2}$ ft.
$\frac{7}{8}$ —1.....	$2\frac{1}{2}$ ft.	$1\frac{7}{8}$	5 ft.
$1\frac{1}{8}$	3 ft.	2.....	$5\frac{1}{2}$ ft.

Place rope in a vise with the splicing end on the outside of rope, i.e., the short end should come on the opposite side of where the splicer stands. Take off the seizing and allow the strands to untwist. Cut off the hemp center and arrange the strands most conveniently for the splicer's use. It is always well before starting a splice to put a small tie wire on ends of strands to prevent wires untwisting.

(A) Insert spike under the first two strands nearest the point of thimble and bend spike a half a turn in the splicer's direction. By inserting strand No. 1 up through this opening and rotating spike back to the point of thimble, one tuck is given.

(B) Take strand No. 2 and insert spike under the next single strand and follow the same procedure as you did on the previous one.

(C) No. 6 is next. Omit one strand and take two with spike, giving one tuck.

(D) Strand No. 5 is now taken. Insert spike under the next single strand. Rotate spike a half turn each time pulling the strand up through the opening until the last tuck, or No. 4, is given. This tuck, insert strand down through opening. The strand is now complete with four tucks.

(E) Repeat the same work with strands Nos. 4 and 3, taking the next laid in strands as they come in order.

(F) Then proceed back to No. 2 and finish giving three more tucks.

(G) Take No. 1 next and then No. 6 and give three tucks each. If work is properly carried out, the work should be uniform all over.

By cutting off the ends and removing the inequalities in the splice with a hammer, completes a four tuck splice.

For protection of the hands, it is always well to serve the splice with soft iron wire. The accompanying photographs show a four tuck splice in different stages.

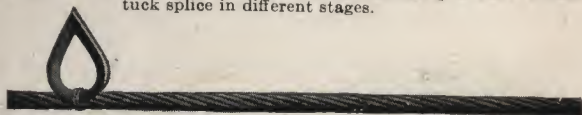


Fig. 1. Showing straight piece of rope with thimble fastened to it. The additional length of rope depends on the size of rope to be spliced.



Fig. 2. The rope is now bent around thimble and placed in vise as shown in the illustration.

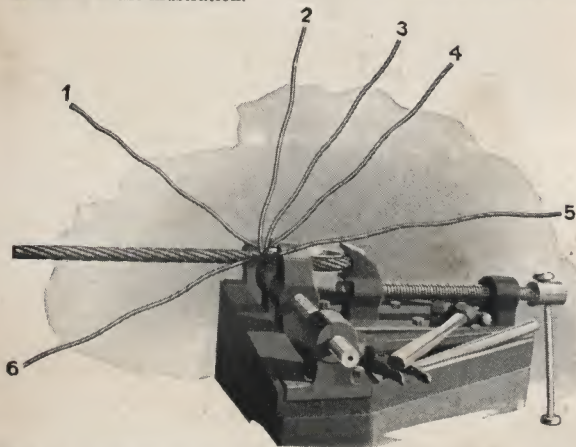


Fig. 3. The short end of the rope is now unfastened and the strands separated. These are numbered as they come in order previous to tucking.

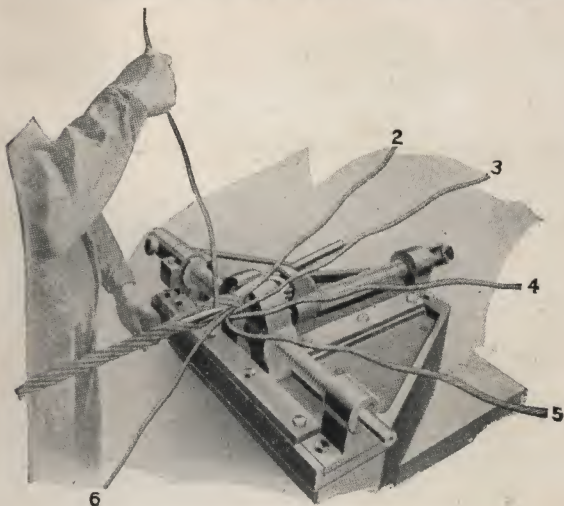


Fig. 4. A marlin spike is inserted in the first two strands nearest the point of the thimble and rotated, allowing strand No. 1 to be inserted, making the first tuck.

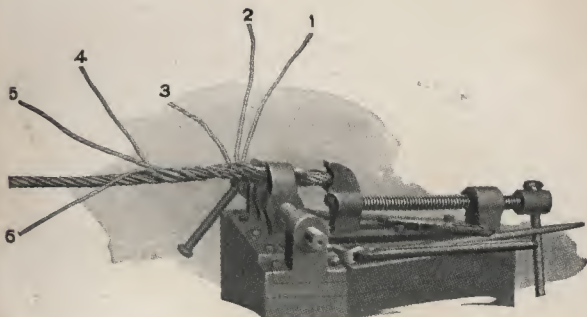


Fig. 5. The first three strands 1, 2 and 6 are each given one tuck. The remaining three strands 5, 4 and 3 are each given four tucks. Giving the remaining three strands three tucks each, completes a four tuck splice.

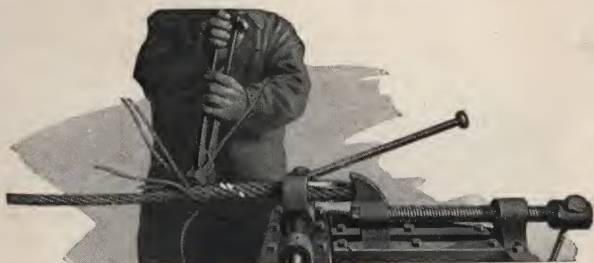


Fig. 6. The short lengths of strands are now cut off and the inequalities removed by heavy wooden mallets or Babbitt hammers.



Fig. 7. The splice is now complete, but it is customary to serve the finished splice with soft iron wire or seizing strand for protection of the hands in handling. The splice is shown ready for serving.



Fig. 8. The serving operation is shown partially finished.

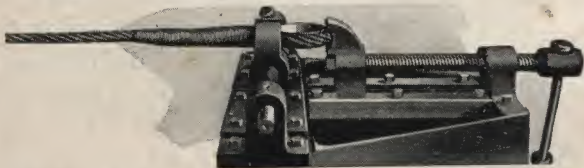


Fig. 9. The serving is now completed with the ends of the serving wire fastened down near the point of the thimble. The splice is now ready for use.



1. Seizing Iron
2. Marlin Spikes
3. Babbitt Hammer
4. Pliers

5. Wooden Handle, Splicing Pins
6. Carew Cutters
7. Shoemaker's Knife

Standard Splicing Outfits for Tuck Splicing

Prices on the following splicing outfits will be quoted on application:

$\frac{3}{8}$ " Rope and Smaller

- 1—2½-lb. Babbitt hammer
- 1 pr. 14" Carew cutters
- 1 pr. 8" pliers
- 1 shoemaker's knife
- 1—9x $\frac{3}{8}$ " wooden handle, splicing pin
- 1 No. 2 seizing iron

$\frac{1}{2}$ " to $\frac{3}{4}$ " Rope

- 1—2½-lb. Babbitt hammer
- 1 pr. 14" Carew cutters
- 1 pr. 8" pliers
- 1 shoemaker's knife
- 1 tapered marlin spike, 14x $\frac{7}{8}$ "
- 1 No. 2 seizing iron

1¼" to 1½" Rope

- 1—3-lb. Babbitt hammer
- 1—9-lb. Babbitt hammer
- 1 pr. 14" Carew cutters
- 1 pr. 8" pliers
- 1 shoemaker's knife
- 1 tapered marlin spike, 16x1"
- 1 tapered marlin spike, 2½"x1 $\frac{1}{8}$ "
- 1 No. 1 seizing iron

$\frac{7}{8}$ " to 1⅛" Rope

- 1—2½-lb. Babbitt hammer
- 1 pr. 14" Carew cutters
- 1 pr. 8" pliers
- 1 shoemaker's knife
- 1 tapered marlin spike, 16x1"
- 1 No. 1 seizing iron

1⅝" to 2" Rope

- 1—3-lb. Babbitt hammer
- 1—9-lb. Babbitt hammer
- 1 pr. 14" Carew cutters
- 1 pr. 8" pliers
- 1 shoemaker's knife
- 1 tapered marlin spike, 16x1"
- 1 tapered marlin spike, 3½"x1½"
- 1 No. 1 seizing iron

Socket Attachments for Wire Rope

Numerous tests have proven that the socket is the strongest and most reliable fastening for the end of a wire rope. Different methods have been used for attaching sockets, but the best method thus far developed, and one recommended by the Bureau of Mines in their Bulletin No. 75, is the one which will be shown on the succeeding pages. This is a practice developed by this Company for this class of work.

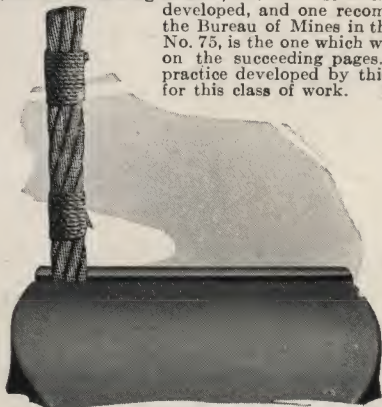


Fig. 1. The rope should be securely seized at the end before cutting off, and an additional seizing placed at a distance equal to the length of the basket of the socket away from the end. In the case of large ropes, this seizing should be several inches long and securely wrapped on with a special seizing iron. This is very important in order that the lay of the rope should not become untwisted, otherwise the tension on the strands may not be equal when the socket is applied.



Fig. 2. Take off the end-seizing on the rope, leaving the seizing at a distance equal to the length of the socket basket. Then cut out the hemp center, back to this seizing, and broom out the wires perfectly straight; i.e., they should all be untwisted not necessarily straightened.

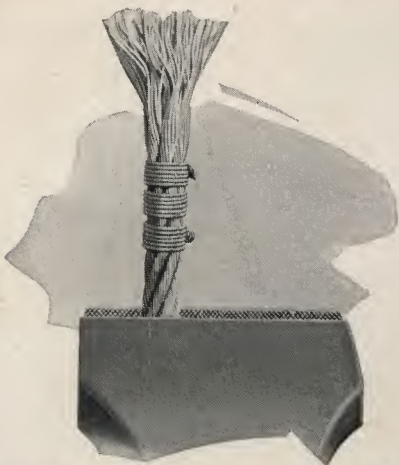


Fig. 3. Ends of the wire are now broomed out, so that they may be readily cleaned.



Fig. 4. The wires, for the distance that they are to be inserted in the socket, should be carefully cleaned in benzine, naphtha, or gasoline, and then the wires should be dipped in a bath of commercial muriatic acid for a period of about 30 seconds to one minute, or until the acid has thoroughly cleaned each wire. Dip the wires in boiling hot water to which has been added a small amount of soda to neutralize the acid.

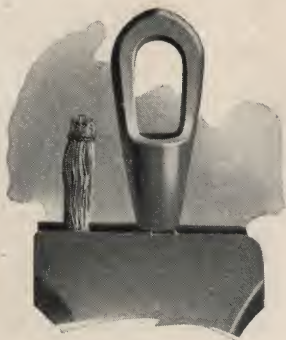


Fig. 5. After having been cleaned, the ends of the wires are drawn together with a piece of seizing wire so that they will be reduced in size sufficiently that the wire rope socket may be placed thereon. Be sure that the socket lines with the axis of the rope.

Fig. 6. Having drawn the ends of the wires together, force the socket over the end of the rope, remove the seizing, and allow the socket to come to the position which it has to take.

Fig. 7. Seal the base of the socket basket with putty, clay, or similar substance and pour molten zinc into the basket of the socket until it is full. The zinc must not be too hot or it will anneal the ends of the wires, particularly on smaller ropes. About 800 to 875 degrees should be sufficiently hot. When congealed, the socket can be plunged into cold water to cool off. If socketing is properly done, the wire rope when tested to destruction will part in the clear between the sockets.



Fig. 8. The finished article.

Incline Planes

Where wire rope is used for moving loads on slopes and inclined planes, the stress to which the rope is subjected is a function of the inclination of the plane.

In the table below are given the rope stresses per ton of load for planes of different degrees of inclination. An allowance is made for rolling friction, but the weight of the rope is not taken into account. In long hauls, however, the latter is a factor of importance and must be allowed for.

In using this table a factor of safety of from five to seven should be employed. That is, the working stress on the rope should not exceed one-fifth to one-seventh of the breaking stress. For very steep planes, a safety factor of five may be used; but for gentle inclines, where the rope drags heavily, a factor of six or seven should be employed.

Elevation in 100 Feet	Corre- sponding Angle of Inclination	Stress in Lbs. on Rope per Ton of 2000 Lbs. Load	Elevation in 100 Feet	Corre- sponding Angle of Inclination	Stress in Lbs. on Rope per Ton of 2000 Lbs. Load
5	2°-52'	112	105	46°-24'	1457
10	5°-43'	211	110	47°-44'	1487
15	8°-32'	308	115	49°	1516
20	11°-19'	404	120	50°-12'	1544
25	14°- 2'	497	125	51°-20'	1570
30	16°-42'	586	130	52°-26'	1592
35	19°-17'	673	135	53°-28'	1614
40	21°-48'	754	140	54°-28'	1633
45	24°-14'	832	145	55°-24'	1653
50	26°-34'	905	150	56°-19'	1671
55	28°-49'	975	155	57°-10'	1689
60	30°-58'	1040	160	58°	1703
65	33°- 1'	1100	165	58°-46'	1717
70	35°	1156	170	59°-32'	1729
75	36°-52'	1210	175	60°-15'	1742
80	38°-40'	1260	180	60°-56'	1754
85	40°-22'	1304	185	61°-36'	1766
90	42°	1347	190	62°-15'	1776
95	43°-32'	1385	195	62°-51'	1786
100	45°	1419	200	63°-26'	1794

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